

MILK AND MEAT.

CALIFORNIA STATE BOARD OF HEALTH.

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REGULAR MEETINGS

The California State Board of Health meets regularly the first Saturday of each month, but the stated meetings of January, April, July, and October constitute the quarterly meetings required by law to be held at the Capitol of the State.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, California.

SEPTEMBER BULLETIN.

CONQUERING THE UNSEEN.

By RAYMOND RUSS, M.D.

A veteran of the Spanish-American war, who had passed through months of active campaigning in the Philippines, said to the writer: "The soldier gets accustomed to confronting danger, for it is his duty to face the foe and to give him battle, but the strongest heart may quail in a hail of bullets which come from whereabouts unknown. It is the hardest thing of all to expose one's life to the hidden enemy; to stand in the open and accept the chance of death when one is powerless to retaliate. By a fight I would signify a conflict between two or more people, and it is presupposed that every man has an opportunity to defend himself; take away this right and battle becomes a slaughter." The veteran had reference only to men and to their methods of warfare. He had overlooked completely a foe, compared to which the opposing army was naught, the insidious enemy of contagion, an unseen opponent also, but one so lurking in its nature, so secretive in its movements, so subtle in its attack and so intangible to those in authority that the shot of the human enemy is as nothing compared to it.

In the war with Spain this foe of contagion killed fourteen soldiers to every one who died from wounds. This is a sad commentary on our army medical corps. Civilized warfare gives no other such record of hopeless inefficiency,—such a wanton jumble of unpreparedness, unfitness, bureaucracy, and stupidity. The English army comes next in wholesale slaughter of its troops, as Seaman, Freemantle, and other commentators have shown. In the Boer war seven soldiers died from disease to one from wounds. Did the conditions of large camps and the handling of great bodies of men make these awful records necessary? Not at all, for in the Russo-Japanese war more than four died from bullet wounds to one from disease.

Sanitation has reversed these disgraceful records of the Anglo-Saxons. The common sense application of the great principles of medical science,—proper food, clothing, surroundings, in other words personal and camp hygiene, are responsible for this. It is doubtful if the outrages of twelve years ago could be repeated to-day, for an indignant public would demand a proper correlation in the army between line officers and medical corps. The medical corps would then assume its proper status, and no longer be a fifth wheel, incapable of revolving because of the red tape with which it is securely bound.

Vox populi is the final court in every republican form of government, and *vox populi* will be a *vox dei*, for the people of our country are rapidly being educated to the necessities of sanitation. This fact must be apparent to the most casual observer for "Sanitary" has become a byword. It greets one from the advertising pages of newspapers and popular magazines. It is appended to numerous articles with which man comes directly in contact, and it has been created moreover by a

popular demand which is rapidly increasing. It is the talisman which sells everything from a tooth brush to a box of soda crackers. It is only natural that people should first inquire into the food they eat and the clothes they wear, but a thinking public has extended its questionings to water supply, sewage and garbage disposal, and other carriers of infectious disease. It was only a short time ago that man considered the inquisitive house fly as a necessary though pestiferous companion. The knowledge of the dangers from this source has been so widely disseminated that relentless campaigns against this scourge are now being waged everywhere. The work of mosquito eradication in our own State has firmly convinced the public of its efficacy, and it is being supported with an enthusiasm which was hardly expected.

We have been especially fortunate in materially benefiting from the great campaign of education which was carried on in San Francisco during the plague trouble, for it has left a lasting impression upon the whole State. It has demonstrated conclusively that the results from education of the individual are far greater than can be obtained from compulsion and that the people are ready and willing to be led, not driven. Foul smelling outhouses are rapidly giving place to adequate systems of sewage disposal. The manure, which was formerly piled high in the barnyard, has been recognized as a source of danger and is being regularly carted away. People are beginning to talk about water contamination, and the farmer no longer believes that he can bore his well at the most convenient point without reference to barn, privy and kitchen drainage. The virtues of our California climate are not expected to cover personal negligence; our citizens have become aware that typhoid and malaria are present in some localities, and the fact that these are preventable is being brought home to them. California is certainly making splendid progress in its fight against the Unseen.

It seems in this work that the medical profession should be a most potent power for good. The important advances which have been made in sanitation have come from medical men, but, unfortunately, as yet comparatively few of the members of this important profession are actively interested. When the coöperation of all is obtained the task will dwindle from the massive proportions which it now assumes. But the doctor's apathy is more apparent than real, for at heart he is only too willing to do his share. The difficulty has come from his methods of dealing with the public on medical subjects; for he has been taught to believe that things of the body are of little general interest and that the individual, sometimes because of deficient education, and always because technical training is lacking, is not a person to appreciate medical topics. But a change has taken place in the old order of things and an inquisitive public is now hungry for medical information. The magazines have done much toward turning the popular trend into these interesting channels. The causation of disease, the indications of symptoms and the reasons for their existence are endless sources of speculation to the lay mind. The writer was recently much impressed by a man who had walked fifteen miles for the sake of propounding questions concerning malaria and its propagation by the mosquito. He had read a short but succinct account of this disease in a popular magazine and upon his own ranch had demonstrated to his entire satisfaction many of the truths which had been brought home

to him. He stated that his whole family were suffering from malaria and that the solution of the problem meant everything to them.

People are thoroughly alive to these great topics. The power which the intelligent doctor can wield, if he only will, is enormous. He is like the giant of old who only became aware of his superhuman strength when he was brought in contact with conditions which seemed unsurmountable. The physician will discover that interest in sanitation is not confined to the cultured classes but extends to the very lowest; all have the ability to understand. The education of the public is imperative for only through their intelligent coöperation may the sanitarian hope to be victorious against his invisible foes.

THE MENACE OF TROPICAL DISEASES TO CALIFORNIA.

By HERBERT GUNN, M.D., San Francisco.

The importance of tropical medicine is rapidly becoming appreciated throughout the United States and where only a few years ago but an occasional worker could be found interested in the subject, now there are many. The subject appears in the curricula of many of the medical colleges, some of which have established departments of tropical medicine. The result of this growing interest is apparent in the increased number of tropical ailments now being recognized in all parts of the country. No state in the Union is more vitally affected by the group of diseases generally known as tropical diseases than California. Our intimate commercial intercourse with many other tropical regions furnishes an abundance of diseases peculiar to those countries. Upon the completion of the Panama Canal our increased traffic on the Pacific will give rise to new and serious problems in the prevention of the dissemination of new diseases in this country. The climate conditions here in California are in certain parts of the State quite favorable to the development of tropical diseases, so that we have no reason for believing that if introduced they will not flourish. Several diseases have already gained a foothold: malaria, bubonic plague, amœbic dysentery, and hookworm disease.

California has undoubtedly been receiving cases of various diseases for many years from China, Japan, and Central and South America, but since the acquisition of our tropical possessions the supply has been greatly augmented by returning soldiers and civilians. One of the greatest sources of infection for certain diseases during the past seven or eight years has been the Hawaiian Islands. Although these islands have usually been considered quite free from most tropical ailments, except leprosy, they have imported enough during the last decade to make them a serious focus for the spread of certain diseases. Their mistake was in the importation of thousands of Porto Ricans to work upon the sugar plantations. Five years ago the writer demonstrated that over 50 per cent of these people were affected with hookworm disease which they had contracted in Porto Rico. These conclusions* were reached after the examination of over 100 Porto Ricans who had taken up residence in California after leaving the Hawaiian Islands.

Within the past year several cases of this disease came under observation which undoubtedly were contracted in the Hawaiian Islands. While considerable sums have been expended by the Federal Government

*Two articles published in the California State Journal of Medicine, 1895.

to stamp out this malady in Porto Rico, it has been rapidly gaining a foothold in Hawaii; by the time millions of dollars have been expended in the southern United States to eradicate hookworm disease it will probably be found to have gained a firm foothold in California. Scattered throughout California to-day there are hundreds of cases and more are constantly arriving.

In San Francisco there is quite a colony of people affected with hookworm disease. In the cities, on account of sewerage, there is practically no danger of the disease being spread, but in rural districts the danger is great. The soil and water supplies being contaminated, man is infected either by the entrance of the parasite through the skin or by ingestion of infected material. Within the past year several cases of this disease have been reported as originating in this State. The most important of these, occurring in a mine in Amador County, were described by Dr. F. F. Sprague. Conditions in mines are often ideal for the propagation of the hookworm and once established it is very difficult to eradicate. Vast sums were expended in the Westphalian mines before it could be controlled.

It can readily be appreciated that the infection of the Hawaiian Islands and California with this disease is a matter of considerable importance. Many of the Porto Ricans harbor, in addition, the *Filaria sanguinis hominis*, a small blood worm which is transmitted by the mosquito. About a dozen cases of this infection have been observed by the writer in San Francisco, also several cases of elephantiasis, a disease believed by many to result from filarial infection. It was estimated that about 10 per cent of the Porto Ricans are infected with this parasite, so that at least a couple of hundred infected individuals are scattered throughout the State.

A rarer infection also found in these people is the *Schistosomum haematobium* or Bilharzia disease, a worm inhabiting the veins and producing dysenteric symptoms. Three cases came under the writer's observation in San Francisco which are, it appears, the only cases reported in the United States. Another species of this parasite, affecting the bladder, has been observed here on several occasions. The life history and mode of development of these parasites is not understood, so we do not know how much danger there is of the disease being disseminated.

Amœbic dysentery, one of the greatest scourges of the tropics, has already gained a foothold in this State and cases developing here are occasionally encountered. It is impossible to trace the origin of this infection in California, but unquestionably the disease has been greatly disseminated by infected persons returning from the Philippines and taking up residence in rural districts. In several parts of this State amœbæ have been occasionally demonstrated in water supplies and in washings from vegetables, such as lettuce, but further work is necessary before it can be definitely stated that these are disease bearing. Bubonic plague, which has taxed our efforts so greatly for the past few years, has gained a firm foothold in California in the ground squirrel, and isolated cases may be expected to develop at any time. However, with the present efficient Federal inspection, it is not probable that any serious outbreak will occur. The eradication of plague in San Francisco affords one of the most striking examples of the brilliant results of modern sanitation.

Malaria, which is so prevalent in certain parts of the State, should for several reasons be looked upon from a tropical standpoint. *Filaria sanguinis hominis*, which we have at hand, and yellow fever, which we may have at hand with the advent of the Panama Canal, are like malaria mosquito-borne diseases and may, under favorable conditions, thrive here. In certain localities in the tropics malaria of the æstivo autumnal variety at times develop most malignant characteristics. The parasite found in these pernicious cases appears the same as the ordinary æstivo autumnal parasite found in the milder fevers, but as the pernicious cases are usually confined to certain localities and do not occur in many places where the æstivo autumnal parasite is prevalent, it would seem possible that there may be some difference in the parasite. If this were the case, it might be possible for the parasite of the pernicious variety to become established in our malarial districts. The writer has seen three cases of pernicious malaria in San Francisco, one of which died. One was from New Orleans and two from the Philippines.

Of three cases of lung fluke disease observed in the United States, two occurred in California,—one found by Dr. Cooper and one by Dr. Wellman. This disease is quite prevalent in certain parts of China and Japan and doubtless many cases here have been overlooked, it usually being mistaken for tuberculosis. The life history of the parasite is not understood. Cases of gangosa described by Dr. Geiger, of the United States Navy, leprosy, beri beri, liver flukes diseases, and diarrheas produced by the *balantidium coli* and *strongyloides intestinalis* complete a list of tropical diseases observed in California, which I am quite sure could not be duplicated in any state in the Union.

None of the diseases considered in this paper, except leprosy, plague, and yellow fever, comes under the regulations of the quarantine service, so there is nothing to prevent infected persons going and coming where they please. Of course in some of the diseases it would be very difficult to know what to do with them if they could be regulated, but in others the measures that should be taken are perfectly understood. The eradication of yellow fever in Havana, New Orleans, and in the canal zone shows what attention to the mosquito may accomplish. Malaria and filariasis may be controlled in the same way. Attention to the rat cleared San Francisco of plague. Other diseases, such as amœbic dysentery and hookworm disease, are controlled by preventing contamination of the soil and curing the cases. In hookworm disease a cure can be accomplished in a few days, and by treating all cases and guarding against reinfection the disease should soon be stamped out of a community.

MILK IN RELATION TO PUBLIC HEALTH.*

By GEORGE M. KOBER, M.D., Professor of Hygiene, Georgetown University,
Washington, D. C.

In view of the importance of milk as an article of diet for all classes, but especially infants, invalids, and the sick and convalescent, it is perfectly natural that much attention should have been given to the study of this food-stuff, and that of late years the sanitarian and bacteriologist should have found it a profitable field for research.

*EDITOR'S NOTE.—This recent article has been kindly furnished for reprinting by the author, who, as pointed out in the Comments, was one of the pioneers in the milk-improvement movement and a valuable contributor to the early publications of the California State Board of Health, while stationed in California as an officer in the United States Army.

Few countries until recently have deemed it necessary to do more than prevent adulteration of the milk, and some of the legislators appear to think that as long as the milk has not been skimmed or watered, and contains the standard of total solids and fats, we need not worry about the germs we eat or drink. This may be a pleasing reflection to persons who do not know that such hydra-headed diseases as scarlet fever, diphtheria, and cholera infantum have been disseminated in the milk supply; that typhoid fever epidemics have been thus caused, and that milk may be the vehicle of the germs of tuberculosis and other infectious diseases and morbid agents.

Time will not permit me to do more than to briefly point out some of the circumstances under which milk may be the cause of disease.

1. Sour milk, or milk which is on the point of turning, is very liable in infants, children, or persons with feeble digestion to produce gastric and intestinal catarrhs of an acute or chronic character. In the more acute cases, in bottle fed children, we have the phenomenon of cholera infantum. The causes of untimely acidity of the milk are improper feeding of the animals, dirty milk pans and rooms, unclean udders and teats, and a high temperature.

Every consumer of milk has doubtless observed the presence of more or less foreign matter found at the bottom of the vessel or bottle in which it is kept; indeed, it is a matter of such common occurrence that it hardly excites our attention. If these sediments are subjected to microscopical examination we will find that they are composed of epithelial debris, hairs of the cow, organic and inorganic dust particles, bacteria, fungi, and spores of every description, and last, but not least, excrementitious matter from the cow, which, adhering to the udder or other parts of the animal, gained access to the bucket in the act of milking. Unfortunately, fully 90 per cent of the bacteria found in such specimens are fecal bacilli. Milk when it leaves the udder of a clean cow contains very few germs; the majority gain access during unclean handling, especially when the milking is done in a dirty or dusty stable. The germs multiply with astonishing rapidity whenever the milk is kept at a temperature above 50 degrees F. Petruschky has shown that at the room temperature a streptococcal content of 300 per ccm. may increase in twenty-four hours to one of 10,000,000, but the same milk kept at 50 degrees F. yielded but 30,000, or but three one-thousandths as many. These and other investigations indicate the extent of germ development which must go on when milk is transported without refrigeration over long distances with the thermometer ranging between 80 and 90 degrees, and the absolute necessity of keeping it at a temperature of 50 degrees F. The number of bacteria in the market milk of Washington City, according to Dr. Rosenau, averaged 22,134,000 per ccm. in the summer of 1906, and 11,270,000 in the summer of 1907. The legal standard of permissible number of bacteria in Boston is 500,000, and at Rochester 100,000, and we can all agree with Prof. William H. Park: "That any intelligent farmer can use sufficient cleanliness and apply sufficient cold with almost no increase in expense to supply milk twenty-four to thirty-six hours old, which will not contain in the maximum over 50,000 to 100,000 bacteria per ccm. and that no milk containing more bacteria than this should be used."

Without doubt the dirty and sour milk or milk which is on the point

of turning is the chief cause of cholera infantum and diarrhoeal diseases in bottle fed children. One of the reasons why there are less deaths from infantile diarrhoea in rural districts than in towns and cities in proportion to the population is that the milk used is comparatively fresh and contains fewer germs and less toxins. Dr. W. J. Tyson tells us that three fourths of the 150,000 infantile deaths in Great Britain occurred among bottle fed children.

Indeed, we have evidence that of the 54,047 infantile deaths which have been investigated at home and abroad with reference to feeding, 86.6 per cent had been artificially fed, all of which points to the fact that the quality of the food, chiefly cows' milk, in hand fed children, plays the most important rôle. This assumption finds, moreover, support by the fact that the infantile death rate and diarrhoeal diseases in children under five years of age have materially decreased in a number of American cities since the enactment of pure milk laws, notably in Buffalo, Rochester, Chicago, New York, and Washington. According to Dr. Woodward's report for 1905, the death rate from diarrhoea and inflammation of the bowels among children under two years of age during the five-year period ending 1894, was 175 per 100,000. During the next ten years it dropped to 109, and in 1906 it was only 97. Dr. Woodward says: "The only explanation for the fall in the death rate from infantile diarrhoea that I have been able to discover is the enactment on March 2, 1895, of the law regulating the sale of milk in the District of Columbia, and the establishment of dairy and dairy farm inspection under the provision of that law."

2. Milk may be rendered unfit for use and cause sickness in children by reason of improper food of the animal, or while the animal is being treated with strong remedial agents, which may be excreted in the milk. The symptoms of poisoning from arsenic, copper, iodine, lead, mercury, tartar emetic, atropine, colchicum, croton oil, strychnine, veratrum, viridis, etc., have been thus observed. The evidence on this subject has been presented in detail in the writer's monograph published as Senate Document 441 in 1902.

3. Milk itself may be morbid as the product of a diseased animal. Dr. Busey and myself have elsewhere pointed out that inflammatory conditions of the udder and teats, especially the condition known as garget, owing to the presence of large numbers of staphylococci and streptococci, are doubtless responsible for a large number of cases of pseudo-diphtheria and other septic infections. The milk of animals suffering from acute specific enteritis, puerperal and other septic fevers, foot and mouth diseases, cowpox, anthrax, pleuro-pneumonia, rabies, and tetanus has also been known to produce sickness in the consumer.

4. It has been shown by numerous investigations, both at home and abroad, that the ordinary market milk contains tubercle bacilli. "Dr. John F. Anderson (see Bulletin 41 of the Public Health and Marine Hospital Service) examined 223 samples of the market milk in the city of Washington, and found fifteen, or 6.72 per cent, to contain virulent tubercle bacilli." According to an editorial in the Journal of the American Medical Association, May 22, 1909, bovine tubercle bacilli have been found in about twenty per cent of the cases investigated. In this connection the question naturally arises, What danger, if any, is there from the transmission of bovine tuberculosis to man? Pro-

fessor Koch's views on this subject may be summarized as follows: (1) The tubercle bacilli of bovine tuberculosis are different from those of human tuberculosis. (2) Human beings may be infected by bovine tubercle bacilli but serious diseases from this cause occur very rarely. (3) Preventive measures against tuberculosis should therefore be directed primarily against the propagation of human tubercle bacilli.

His opponents, on the other hand, believe that the danger from the transmission of bovine tuberculosis is considerable, that the meat, milk, cream, butter, ice cream may contain tubercle bacilli—if the product is derived from an infected cow—and that infection by the intestinal route may not only produce tuberculosis of the bowels, peritoneum, and lymphatic glands, but also of the lungs.

There is more or less experimental and clinical evidence to indicate the possibility of the transmission of bovine tuberculosis to man. (Callmette, Guerin, De Schweinitz, Schroeder, Mohler, Ravenel, Eber, and a host of others believe that the bovine variety does cause tuberculous lesions in man.) The writer in 1903 presented to the Association of American Physicians a tabulation of eighty-six cases of milk-borne tuberculosis in children, three accidental inoculations in man by the topical application of cream and milk, and twelve tuberculous wound infections in veterinarians and butchers.

Dr. William H. Park, in a paper read before the same association in May, 1909, reported that of seventeen fatal cases of generalized tuberculosis in infants, five were found to be due to bacilli of the bovine type; two cases of abdominal tuberculosis were both due to the bovine bacillus. Of twenty-nine cases of glandular tuberculosis, nine disclosed the bovine type. In the five cases of bone and joint tuberculosis and four cases of pulmonary tuberculosis among babies, the bacilli were all of the human type.

Dr. Salmon has shown from the vital statistics of Massachusetts and Michigan that while there has been a marked reduction in the mortality of tuberculosis at all other ages, there has been a tremendous increase in the class under five years of age.

5. Milk may acquire infective properties after it leaves the udder of the animal. Numerous instances have been observed in which outbreaks of typhoid fever, scarlet fever, and diphtheria, by their sudden and explosive character, affecting families living in streets and localities supplied by the same milkman, naturally pointed to the milk supply as a common cause. Mr. E. Hart, the editor of the British Medical Journal, was enabled to present to the International Medical Congress, held in London in 1881, the history of fifty outbreaks of typhoid fever, fifteen of scarlet fever, and seven of diphtheria, all traceable to the milk supply. In a similar communication made before the International Medical Congress at Paris, in 1900, the writer presented his conclusions based upon the tabulated histories of 330 outbreaks of infectious diseases spread through the milk supply; these outbreaks consisted of 195 epidemics of typhoid fever, ninety-nine epidemics of scarlet fever, and thirty-six epidemics of diphtheria. Dr. Trask, in Bulletin 41, presents the details of 170 additional epidemics since the appearance of my monograph. Raudnitz estimates that one fourth of the typhoid epidemics in Austria are milk-borne, and so were 17 per cent of the 638 epidemics analyzed by McCrae.

It has been demonstrated by numerous bacteriologists that disease germs may not only survive, but in many instances actually proliferate, in the milk, and it is not a difficult matter to point out the many ways by which these germs gain access, especially when some of the employees are also engaged in nursing the sick, or are suffering themselves from some mild infection while continuing their duties, or are convalescent from the disease and have become chronic bacillus carriers.

It is quite conceivable how animals wading in filth and sewage-polluted water may infect the udder with the germs of typhoid fever and through it the milk. We can also appreciate how infected water may convey the germs by washing the utensils or by deliberate adulterations. Infection may also take place through the agency of scrubbing brushes, dish-cloths, exposure to infected air, and the agency of flies.

Of the 195 epidemics of typhoid fever tabulated by me there is evidence in 148 of the disease having prevailed at the farm or dairy. In sixty-seven instances the infection probably reached the milk by percolation of the germs into the well water with which the utensils were washed; in sixteen of these the intentional dilution with water is a matter of evidence. (In three instances the bacillus coli communis and the typhoid germs were demonstrated in the suspected water.) In seven instances infection is attributed to the cows wading in sewage-polluted water and pastures; in twenty-four instances the dairy employees also acted as nurses; in ten instances the patients while suffering from a mild attack, or during the onset of the disease, continued their work, and those who are familiar with the personal habits of the average dairy hands will have no difficulty in surmising the manner of direct digital infection. In one instance the milk tins were washed with the same dish-cloth used among fever patients. In two instances dairy employees were connected with the night soil service, and in another instance the milk had been kept in a closet in the sick room.

Of the ninety-nine epidemics of scarlet fever, the disease prevailed in sixty-eight instances either at the dairy or milk farm. In six instances persons connected with the dairy either lodged in or had visited infected houses. In two instances the infection was conveyed by means of infected bottles or milk cans left in scarlet fever houses. In seventeen instances the infection was conveyed by persons connected with the milk business while suffering or recovering from the disease, and in at least ten instances by persons who acted as nurses while handling the milk. In three instances the milk had been stored in or close by the sick room. In one instance the cans had been wiped with an infected cloth. In nineteen instances the infection was attributed to disease of the milch cows, such as puerperal fever and inflammation of the udder and teats; but these outbreaks were probably not genuine scarlet fever, but a so-called streptococcus or staphylococcus infection, the symptoms of which closely resemble those of scarlet fever.

Of the thirty-eight outbreaks of diphtheria tabulated, there is evidence that the disease prevailed at the dairy or farm in thirteen instances. In three instances the employees continued to handle the milk while suffering themselves from the disease. In twelve instances the disease is attributed directly to the cows having inflammatory conditions of the teats and udders. These instances, however, may be

regarded as typical examples of streptococcus and staphylococcus infection, giving rise to a form of follicular tonsilitis or pseudo-diphtheria, often difficult to distinguish clinically from true diphtheria or scarlet fever.

It is interesting to note that of the 330 epidemics analyzed by me, 243 have been recorded by English authors, fifty-two by American, fourteen by German, eleven by Scandinavian, and five each by French and Australian writers. This is probably due to the fact that English and Americans usually consume raw milk, while on the Continent milk is rarely used without being boiled.

A review of the evidence in milk contamination both in this country and Europe shows that the laws which have been enacted to protect the public deal largely with the milk sophistication, and even in this respect have fallen short of their aim.

Pure natural milk can only be secured at dairies with sanitary buildings, a pure water supply, healthy, well-fed and well-cared for cows, a well-equipped and well-kept milk room, provisions for thorough cleanliness, intelligent and conscientious people in charge and clean methods throughout. Those who are familiar with the surroundings of our milk farms and the habits of the average dairy employee need no argument for sanitary reforms, and the principles which ought to be carried out should be embodied in effective laws and accepted and enforced in a practical sense. Honorable men will not object to regulations calculated to promote the purity of their product and the health of their consumers, and as many of the most serious faults in the milk business are the result of ignorance rather than of intentional neglect, the difficulties will be materially lessened by proper education and trade competition.

Until the needful reforms in dairy methods are accomplished we recommend the following as immediate safeguards:

(1) Do not patronize a milk dealer at any price whose milk after standing for two hours reveals a visible sediment at the bottom of the bottle. It is evidence of dirty habits, extremely suggestive of danger and entirely preventable by clean, decent methods without greatly increasing the cost.

(2) Subject all your milk to home pasteurization and, after cooling, keep it at a temperature below 50 degrees F. This will not make bad milk good, but it will at least destroy germ life and reduce the chances of milk-borne diseases to a minimum. Dr. M. J. Rosenau has made a thorough study of the advantages and disadvantages of pasteurization and declares: "That there is no evidence to show that low temperature pasteurization ever in itself induces scurvy." The present writer has urged for years pasteurization at a temperature of 150 degrees F. for twenty minutes, and pointed out that the dangers of pasteurization have been exaggerated and the question of incomplete absorption of the salts as a cause of scurvy and rickets has been overlooked. These diseases it should be remembered develop usually in children after prolonged diarrhoeal diseases. The child is placed on pasteurized milk for the relief of diarrhoea and if scurvy or rickets develop, the blame falls upon pasteurized milk, when it properly attaches to the incomplete absorption of the salts incident to diarrhoeal diseases. It is gratifying to record that recent investigations by Dr. Kastle of the Public Health Service show that low pasteurization does not impair the ferments or enzymes

contained in fresh milk, does not alter its chemical composition, does not lessen its food value, either as to nutrition or digestibility, and does not alter its taste or physical qualities. In the light of our knowledge of milk-borne diseases and especially in view of the existence of typhoid bacillus carriers, we know of no means by which the transmission of these diseases can be prevented except by general pasteurization. As a direct means of reducing the slaughter of innocent babes, it has been shown that the percentage of deaths among the infants in the care of the city of New York at Randall's Island was reduced by the installation of a pasteurizing plant from 41.81 for the period ending 1897, to 21.75 for the seven-year period ending 1904.

CALIFORNIA DAIRIES—THE GENERAL PROBLEM.

By WILLIAM F. SNOW.

California probably has in round numbers two million people who use milk in some form in their daily food. This forms a great market and the competition for it is keen. The milks which are presented in this market, whether fresh, canned, or powdered, are all put out in attractive containers, and all claim origin in the udder of the gentle domestic cow. The advertisements of these milks lend credence to the proverbial vision of softly lowing kine, yellow cream, dimpled dairymaids, and triple-plated tin pans; but it is not good business to waste time and money in producing milk under such conditions for an indifferent consumer, hence on investigation the vision generally fades into the sordid picture of the average California dairy of to-day. The gentle well-groomed cow glowing with health is found replaced by the business-cow which is considered to be simply a piece of apparatus useful in the production of so much milk at so much per gallon. The amount she is given to eat is gauged not by the amount she needs but by the quantity of milk she will produce on a minimum diet. It is cheaper to buy new cows than to repair old ones when their health has worn out. The dimpled dairymaid is an English extravagance not attempted in California. The business of her grimy-handed successor is to milk his string of thirty cows twice a day and get back to his other "chores" as soon as possible. As to the yellow cream of the Arcadian vision, the producer has little to do with that. It is his business to see that his combined product meets the minimum requirement of law for butter fats—to go beyond this and stimulate fanciful visions of rich cream is wasteful.

From the business-cow to the indifferent consumer there are many and devious routes. They are constructed upon but one common principle, *i. e.*, large profits to the milk dealer and low price to the consumer. These conditions will continue so long as people fail to investigate their own milk supplies themselves, and refuse to provide their health officers with trained inspectors to do it for them.

The tenderfoot milk reformer sitting at his desk with laboratory reports and tables of infant mortality before his eyes, writes out a list of requirements for sanitary milk supplies. He wants healthy, well-fed cows, stabled and milked under sanitary conditions, the milk to be immediately cooled and conveyed to the consumer without exposure to

dust or heat en route. Nothing could be more simple or more reasonable—on paper! No milk reformer of note has failed to pass through this stage. It is the inevitable enthusiasm of youth, and has been the means of bringing these same inexperienced but determined reformers face to face with the almost insurmountable commercial difficulties which confront the actual producer of the milk. In order to bring the facts of the laboratory to bear on the frightful infant mortality from "bad" milk these pioneer reformers have realized that education and patient persistence are the tools they must use. Health departments, police courts, state laws, and city ordinances are necessary details, but the essential foundation upon which milk improvement associations must build is instruction of the dairyman in the methods of producing clean milk, and instruction of the consumer as to the characteristics and importance of pure, clean milk.

The dairyman points out the difficulties of the milk business in some such way as this: The milk commissions stir up the people with facts and figures to show the dangers of unclean milk, and city trustees are urged to pass ordinances, compliance with which means the expenditure of thousands of dollars on each dairy without prospect of increased revenue from the sale of the milk. The public demands a low uniform price for milk throughout the year, but cheerfully pays a fluctuating price for butter, which is based upon the same varying costs of manufacture. Tuberculin-tested cattle are demanded when it is generally conceded that if he kills his tuberculous cattle he can not buy tested cattle to replace them. Trained dependable milkers are demanded, without regard to the scarcity of such men at any salary. Transportation of the milk in iced-bottles direct from the producer to the consumer is demanded when it can be demonstrated that neither the railroad companies nor the middlemen will coöperate with the producer in accomplishing this. Lastly, the dairyman complains that if he attempts to meet all these demands, his experience will be that of many others who have found that the public will not protect them from the cut-rate methods of competitors, who save expense by producing filthy milk.

The milk commissions have realized the justice of these charges, and are attempting to meet them.

The medical milk commissions are demonstrating that ambitious dairymen can produce safe, rich, clean milk if they determine to do so and have the steady patronage of an appreciative public: the civic milk improvement associations are demonstrating that dairies in general can maintain a much higher standard of cleanliness without increased cost: the educational committees of these associations, and other agencies, are demonstrating to the people that milk is a food, not merely a beverage, and that its value should be estimated not on its bulk and white-color but on the food materials it contains and the cleanliness with which it is handled: the State Dairy Bureau is improving the general standards of quality and sanitary environment of milk: and the State Board of Health is tracing out and eliminating unsanitary milk-supplies brought under its jurisdiction by the appearance of communicable diseases on dairy premises. The resultant of all these influences is a steadily improving milk supply throughout the State.

The special articles on milk which are being written for this Bulletin will give a survey of the lines along which this progress should proceed with accelerating speed. The administrative side of the question, however, is of importance. All students of the milk problem agree that milk-inspection must include both laboratory and field supervision, if good results are to be obtained. Some cities receive milk from as many as twelve or more counties. These cities and the counties into which their field inspectors go have many differing regulations, and the dairy-men are often greatly confused by this. The need for standardizing inspection methods and regulations should be apparent. There should be a county milk-inspector under the direction of the County Health Officer whose duty would be to enforce standard county ordinances for milk production. The State Bureau of Dairy Products should have the authority to control all intercounty traffic in milk just as the Federal Government controls interstate traffic in other foods.

One of the recent innovations in the milk business is the use of the single service package for milk. Many failures have marked the progress of this movement but milk cartons have now been devised which have withstood every practical objection from commerce and hygiene. There remains only the trial of such a package in competition with the individual-delivery bottle. If this is successful every effort should be made to encourage its widespread adoption. There is just as much reason (far more in fact) for buying a sealed, guaranteed package of milk direct from the farm of a well-known dealer of reputation for his fine dairies, as for buying a sealed package of baked beans, or shredded wheat biscuits on the same guarantee.

But from the point of view of the health officer there is a very special reason for advocating guaranteed, sealed cartons of milk, dated with the hour of milking and shipped unbroken from the dairy to the consumer or the city retail agency. The general insistence of the public on pure milk direct from the cow to the consumer in original sealed packages delivered on ice would tremendously reduce the illness and mortality among children, and would greatly increase the number of adult milk users who under present conditions deny themselves this valuable food. As a public health measure it would enable the health officer to immediately trace disease outbreaks due to milk and to warn all users of the dangerous supply without interfering with the general milk business of any section of the State. By cloaking the source of infections the middleman's mixing of milk from a large number of dairies undoubtedly favors the spread of disease.

In general, every measure which encourages direct transmission of milk from cow to consumer should be encouraged. The old battle of original purity observed versus safety by filtration, as waged among water reformers, applies with far greater significance to milk supplies. Pasteurization may do all that is claimed for the process, and should be utilized wherever possible as a temporary measure in the advance toward better methods, but the fight for pure milk so handled that it will not need pasteurization or treatment by any one of several other methods that have recently been reported with good results, should never be abandoned.

THE CONTROL AND IMPROVEMENT OF THE MILK SUPPLY OF A LARGE CITY.

By ADELAIDE BROWN, M.D., San Francisco.

To secure clean milk very simple requirements must be met: healthy cows; clean dairying; rapid transportation of a chilled product; honest handling by the middleman, *i. e.*, the city agency which receives and distributes the product; the sanitary handling of milk and milk utensils by the housekeeper.

Our municipality [San Francisco] through its board of supervisors has passed laws to control the handling of milk in its borders; preservatives have been done away with; the fat content is regulated by law; and one of the duties of the chemist of the Board of Health is to appear in court against the milk distributor in whose possession milk below the standard in fat is found. As yet the bacterial content is not made a matter of legal prosecution, but it is studied in every milk sample, taken in sterile bottles and kept on ice until cultured. A count over 500,000 per cubic centimeter (certified milk allows 10,000 and averages 5,000) calls for a letter from the Board of Health ordering the producer to handle the milk more cleanly. Some municipalities have improved matters (Wheeling, S. C.) by publishing the counts of all milk samples in the daily press. An immediate scurrying took place to come within the fold of "clean milk."

Our municipality has assumed another duty in inspecting not only the handling of milk in the city, but in passing regulation by which no dairy can be licensed to sell milk in San Francisco which does not produce it on premises and in a manner meeting certain definite requirements of sanitation. This regulation was passed under the last Board of Health through the influence of the Milk Improvement Association, who raised the money to pay for proper inspection of dairies producing milk outside of the limits of San Francisco County, and appointed a trained veterinarian to do this work. Admirable progress was made in this inspection in that the principle of educating the producer to appreciate sanitary dairies, clean water supply, and proper handling of milk went on steadily.

Many dairies were not licensed until five visits had been made by the inspector at short intervals, thus educating the dairyman to fully understand that the requirements specified at the first visit must be carried out before a license could be issued. This line of work has continued under the present Board of Health and as a result a practically uniform count of 50,000 to 100,000 bacteria has ensued.

The handling of milk with other articles of freight and the proper handling of return cans comes under the head of transportation; and as yet, the value of the milk train which secures rapid and proper transportation of milk, and is supplied by the railroads themselves, is not appreciated by *our* large transportation companies. Therefore, our milk is mixed with chicken coops and the tops of cans are used as paths by men in passing back and forth through the car. Proper transportation is under consideration and through the education of the public it will, no doubt, in time be secured.

The health of the individual cow producing the commercial milk is as yet in no way regulated by more than gross tests. The tuberculin test of

dairy cattle has been brought up for consideration by the municipality of Berkeley, but has been turned down through the influence of the dairymen. Such facts as these are food for thought, at least. Of the cattle passing through California slaughterhouses under United States inspection, 10 per cent in 2,700 were retained for extra examination, being clinically tuberculous. All over the United States the average of tuberculous cattle in slaughterhouses under the same conditions is not over 2 per cent. Whether this condition of our herds can be met best by an attempt to eradicate tuberculosis by the constant testing of the herd or by proper municipal pasteurization of milk is an open question; the former being the ideal which certified dairies are pursuing, the latter

DEATHS OF INFANTS UNDER ONE YEAR OF AGE IN CALIFORNIA FROM CERTAIN CAUSES: 1906.

Cause	Number of deaths	Proportion per 1000 deaths under one year
Measles	38	11.71
Whooping Cough	59	18.16
Diphtheria	12	3.71
Croup	6	1.83
Influenza	14	4.30
Dysentery	34	10.44
Tuberculosis of the Lungs	38	11.71
Tuberculous Meningitis	62	19.05
Abdominal Tuberculosis	19	5.83
Veneral Diseases	26	7.99
Meningitis	132	40.56
Convulsions	73	22.42
Acute Bronchitis	69	21.20
Pneumonia & Broncho-pneumonia	343	105.37
Gastritis	28	8.60
Diarrhoea & Enteritis	727	223.44
Obstruction of Intestines	31	9.52
Acute Nephritis	16	4.91
Bright's Disease	14	4.30
Premature Birth	451	138.55
Congenital Debility	376	115.51
Violence	113	34.71
From all other causes	574	176.34
Total deaths - all causes	3255	1000.0

Compiled from Mortality Statistics U.S. Census Reports 1906.

It should be noted that the longest black line is for diarrhoea and enteritis. The general opinion of physicians is that 90 per cent of the babies dying of these diseases are bottle-fed, not breast-fed babies. These are among the diseases especially spread by "bad" milk. It sounds incredible to say that one baby out of five in California loses its life because of "bad" milk, but the evidence strongly suggests that this is so.

probably the more practical course for the producer of milk. The use of the word pasteurization as applied to what is known as flash pasteurization, exposing the milk for one minute or one minute and a half to 170 to 190 degrees, has a commercial but not a bacterial value and therefore gives false security. Dr. Rosenau of the Department of Hygiene, Harvard University, advises municipal pasteurization, exposing the milk for fifteen minutes to a temperature of 150 to 155 degrees for commercial milk. A practical method for securing this end has been worked out by Professor Farrington of the University of Wisconsin. To secure sanitary milk for a municipality some consideration of this matter will have to be made.

The duty of the householder to the milk delivered at her door is also

a matter for education by physicians. Turning the milk into a container which exposes a large surface to dust and dirt while the cream is rising is bad sanitation. The same cream can be secured in a cleanly way by the use of the Chapin milk dipper, and this should be in the kitchen of every house. The habit of returning milk bottles unwashed, thus increasing their bacteriological content should be remedied. Using milk bottles for anything but milk should be controlled by education. The danger of milk as a carrier of disease needs only being explained to be understood by the laity. Milk bottles should never be taken to a room in which there is a contagious disease for although their mechanical cleaning is thorough at the dairy, they can not be exposed to steam sterilization long enough to be absolutely secure. A campaign of popular education in hygiene and sanitation improves the health of the community exactly so far as the teachers are enthusiastic and intelligent in regard to the possibilities of the situation. A milk supply will be good or poor in any city, according to the intelligent demands of the physicians and the laity of that city.

PASTEURIZED MILK.

By ALFRED BAKER SPALDING, M.D., San Francisco.

The tendency toward concentration of population in cities and the diffusion of knowledge in regard to sanitary science has created manifest troubles for all those engaged in the business of supplying food to the general public. It is hard enough when the average citizen demands merely that the price of his food shall not be high, but when he indignantly refuses to eat diseased meat and decayed vegetables, or permit even an honest adulteration or commercial medication of what comes to his table a point is reached when the hustling, rushing producer is driven almost to distraction. And of all the worried purveyors, the milkman is worried the most.

The milk supply of a city can be likened to a continuous, onrushing torrent, which, starting from many sources, some clean, some not so clean, some dirty, and some filthy, mixes together and acquires such a foulness that it passes with difficulty even the feeble protests of an inefficient force of city inspectors and pours itself down the mouths and throats of thousands of ignorant and intelligent, complaisant and besputtering, sick and well consumers.

From the fact that milk is opalescent, in place of being clear like water, it is possible for a great deal of filth to pass unnoticed by the casual observer. One does not realize that the sediment in the bottom of a glass or a bottle of milk is merely an indicator of the larger amount of cow feces that the milk contains. It has been conclusively proven by experiments conducted by the Bureau of Animal Industry that tubercular cattle are constantly passing large numbers of tubercular germs in their fecal discharges. And bovine tuberculosis is so common (some large herds running as high as 60 per cent) that tubercular germs can be found in a large percentage of ordinary market milk. Hess recently found tubercle bacilli seventeen times in 107 samples of milk, retailed from forty quart cans in New York City. As the technique for finding the tubercle germ free in milk is difficult, this percentage must be taken as merely a fraction of what probably exists.

The tubercular germ is mentioned simply to illustrate one well known disease producer carried in ordinary milk. The germs of typhoid fever, and of diphtheria, as well as others that can produce possibly just as dangerous diseases, are also occasionally discovered, while the so-called harmless germs, which cause souring, etc., are present in countless millions.

The milk distributor in the larger cities has, through the efforts of physicians, veterinarians, sanitarians, etc., been educated to know the conditions as they exist, and has, from the demands of his customers, endeavored to improve the conditions as well as he may and still keep down the price of his product to the level of that of his competitors. Of course he *should* sell only pure milk. He *should* buy from clean dairies, and he *should* prevent the enormous germ growth by keeping his milk cold. He would much rather sell clean milk than dirty, and he is so sorry that manure is mixed with his product that he will do all in reason to get it out. But it costs money to keep it out and as a matter of fact the public won't pay. There is always a premium paid for dirty milk. In New York a charitable society provided the poor of a certain neighborhood with certified milk for their babies at six cents a quart, paying the dairyman the regular increased price for his product. This was done in order to reduce the enormous death rate in infants from summer diarrhea, caused by dirty grocery milk. All went well until the corner grocery reduced the price of milk to five cents and then the certified went begging.

One practical method that many milk distributors are carrying out is pasteurizing, or heating, the milk. Heat, of course, will kill all kinds of germs,—good, bad, and indifferent. But if milk is heated too much the taste is affected. After much experimenting it has been found that all the germs in the milk can be killed, and the quality uninjured, by heating it to 160 degrees for thirty minutes. The beneficent lactic acid germ is killed, as well as the injurious germ. Of course, this does not alter the fact that manure is still in the milk; the manure is simply cooked. Moreover, unless this milk is later most carefully protected and kept chilled, it will soon become a more dangerous food than it was prior to the pasteurization, because new germs, constantly introduced through the usual practice of distribution, will grow rapidly in the pasteurized milk. If kept warm the pasteurized milk will rot and smell similarly to tainted meat, but will not sour because the lactic acid germs have been killed. Again, in addition to the germs, there are spores, or eggs, in fresh milk which are not killed unless the process of heating is prolonged. These spores will rapidly reproduce millions of their kind as soon as the milk reaches the suitable temperature for their growth. As a matter of fact the commercial pasteurization of milk consists in heating the milk quickly to 160 degrees and then rapidly cooling. This instantaneous heating, while economical, is not sufficient. While it kills ordinary germs and prevents souring, it can not kill the more virulent ones, and especially their spores. It actually aids the sale of dirty milk, for much filthy milk, on the verge of souring, can be pasteurized and passed on to the ignorant consumer, whereas, if no pasteurization has taken place the consumer would recognize the trouble himself by the rapid souring.

Pasteurized milk should be the cheapest milk in the market. It should be pasteurized under the supervision of efficient sanitary inspectors and

should be labeled plainly with the date and the degree of pasteurization. It should be kept cold after pasteurization, consumed quickly, and a second pasteurization should never be permitted. If there were on the market certified milk, which is as pure as milk can be produced, and inspected milk, which is from nontubercular cattle, and also is practically a pure, clean product, then pasteurized milk would come to be known as the cheapest product of the milk trade, cooked up so as to be safe. Practically that is exactly what pasteurized milk is, and its chief virtue lies in the fact that it meets the demands of the average consumer because it is cheap.

CERTIFIED MILK AND ITS RELATION TO PUBLIC HEALTH.

By LEWIS SAYRE MACE, M.D., San Francisco; Chairman Executive Committee
California Association of Medical Milk Commissions.

In Newark, N. J., in 1892, began one of the most notable movements for the improvement of public health conditions that the century had seen. The physicians of this city, in common with those of other large communities, found themselves confronted by a problem in the milk supply which seemed well nigh insurmountable.

IMPURE MILK AND ITS DANGERS.

In the distribution of a large amount of milk daily to the centers of population it was but natural that cheapness of the product should determine the success or failure of the producer, provided, of course, that the cheap product could be sold as readily and at as high a price as the clean and consequently more costly article; this was the case with milk. It is an opaque liquid, and almost an unlimited amount of contamination is concealed from view. It is consumed soon after delivery, and so, provided it does not turn sour within a few hours, no complaint will be made. The milk from an infected or diseased cow will, generally speaking, taste as well, and what is more important, sell as well as that from a healthy herd. The result most naturally was that, with few exceptions, the dairies at that time supplying large cities were in an unspeakable condition of filth and wretchedness. The impure product of dirty and infected cows, the sole food of hundreds of thousands of children, caused a death rate so large that all sanitarians and all thinking people were concerned.

THE DEVELOPMENT OF AN IDEA.

An idea occurred to Dr. Henry L. Coit of Newark, N. J., which was destined to play a tremendous part in the awakening of the public conscience and in the ultimate solution of the pure milk problem. A medical milk commission was formed with Dr. Coit at the head, which proceeded to find a dairyman with a well equipped plant and intelligence and ambition enough to desire to be at the head of his business. He agreed to maintain a healthy tuberculin tested herd in sanitary surroundings and to have them milked and handled with all possible precautions against contamination. Experts employed by the commission and the commissioners themselves were to inspect the dairy at frequent intervals and offer suggestions as to improvement of the technique. The commission, on the other hand, agreed to allow him to seal his milk bot-

ties with their official seal and to market his product at an advanced price under the name of "certified milk."

A CAMPAIGN OF EDUCATION.

The milk commission then began a campaign of education which in the past eighteen years has been the means of placing a supply of pure milk in hundreds of cities, and, what is of far greater importance, of arousing a public demand for a purer product and the enforcement of laws for the betterment of the general milk supply.



The essential apparatus for transferring milk from the cow to the consumer, as used by a certified dairy in Central California. Note the gauze-protected milking bucket, the tall covered carrying bucket used in transferring the milk from the cow to the bottling room. The bottles are immediately filled, sealed, and placed in an ice water bath till packed in the boxes for shipment.

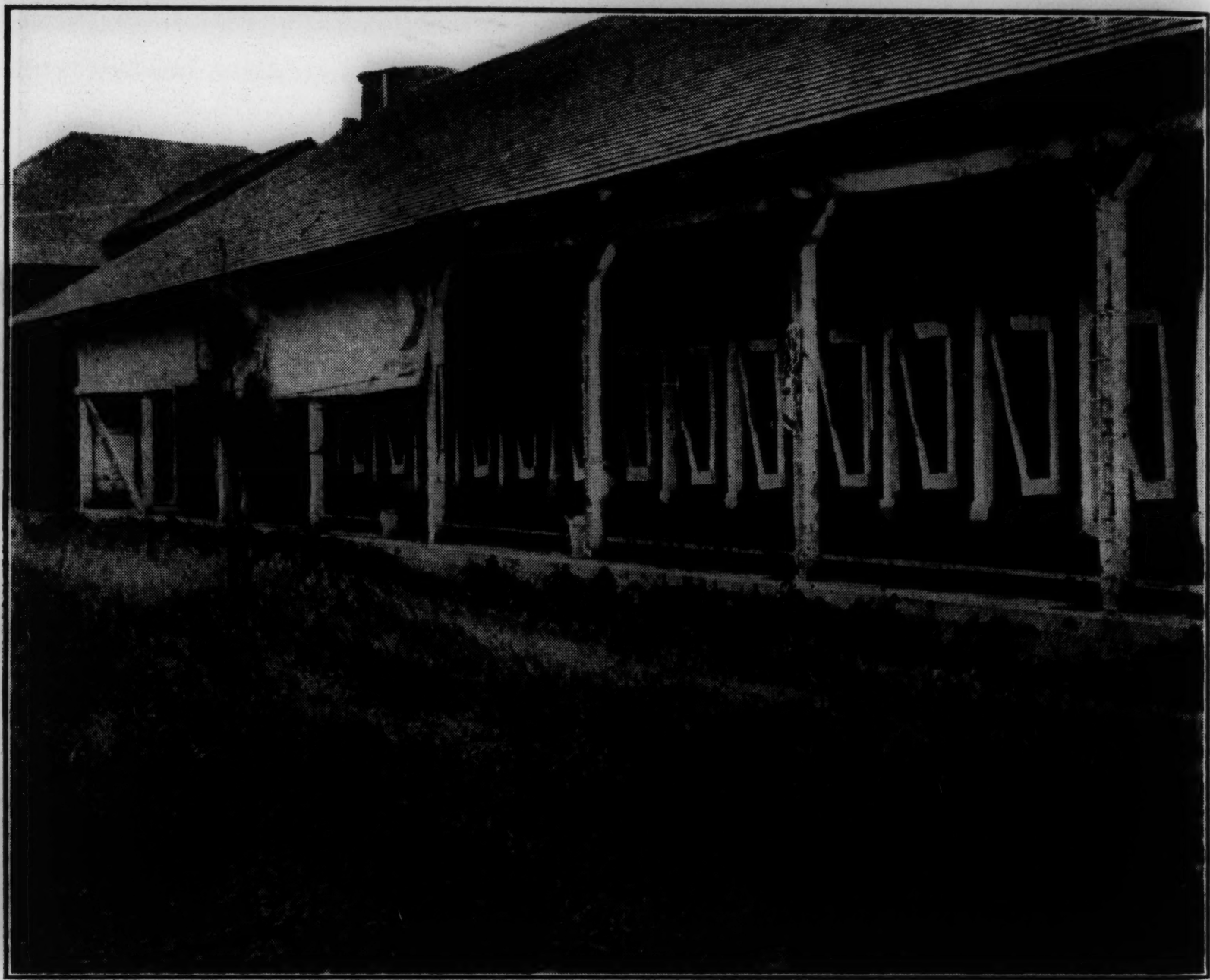
CERTIFIED MILK DETAILS.

The layman has little idea of the countless details which have to be observed before the capped and sealed bottles can be placed upon the market. The cows of the certified herd are especially selected for their health and freedom from tubercular infection. They are regularly examined by the official veterinarian and twice yearly tested with tuberculin. Every cow bears a numbered ear tag and her record and picture is on file with the secretary of the milk commission. Every detail of their surroundings and daily life is carefully supervised. They are groomed and washed like race horses, and the visitor to the milking barn searches in vain for olfactory evidence that a couple of hundred cows are milked there twice daily.

The cleanly milkers in their white duck suits carrying the milk to be

bottled, and the bottling rooms that look like laboratories or surgically clean operating rooms makes an impression upon one which is not easily forgotten.

Certified milk is more than a pure milk supply to be used in emergency for sick children. It is an example of the most perfect product that science and skill can produce, and a notice to all the world that this most important food product can be produced in a clean and wholesome manner, and that ignorance and commercial greed alone are responsible for the existence of impure milk in our markets to-day.



A "fresh air" milking shed in a Southern California certified dairy. Note the grass to prevent dust, the curtains to prevent wind and rain. The construction is very simple and practicable.

UNCLEAN MILK A MENACE.

Already the production and demand for certified milk is large enough to prove that when the consumer realizes that he is better off and safer with clean than with unclean milk, he is willing to pay a fair price to get it. And this is the real function of the medical milk commission—to teach the public the lesson which they are so slow to learn, that unclean milk from infected sources is a menace to public health. It is a difficult lesson because the science of milk production is so little understood, and milk, as long as it is reasonably rich in fat, does not by appearance and taste condemn itself as other food products do.

A CRITICISM.

Medical milk commissions have been criticised, I know, for confining their activities to the certification of certain dairies instead of using

their time and expert knowledge for the improvement of the general milk supply. A moment's thought will show that in doing this they are rendering the greatest possible service to the public, for it is not in a day or a year or a generation that the people as a whole can be educated to demand a pure milk supply, and if it were not for the example of the certified farms constantly before us, we would not only be without a pure supply in time of pressing need, but the public mind, misled by the prejudicial statements of the commercial dealer, would soon lose sight of the real issues involved, and we should soon be back again to where we were a decade ago.

PUBLIC REALIZATION.

It is, of course, shortsightedness which makes the commercial dealer depreciate the value of certified milk. A large portion of the public already realizes that milk is the most important and most generally used article of food, and that its purity is of untold importance.

They already know that the dairy cattle of this State are, to an alarming extent, infected with tuberculosis, and they will not long put up with the character of the product now offered them; neither will they long be put off with the commercial makeshift of pasteurization, even if it should be advocated by the department of agriculture itself. When once they decide to use only milk free from tuberculosis they will not be appeased by the statement that the milk has been warmed and the germs, perhaps, killed.

EXTINCTION OF TUBERCULAR CATTLE.

When that time comes the owner of a certified herd will be far ahead of all his competitors, for we are certain, ultimately, to demand the extinction of tuberculosis among our dairy cattle. It can not be done in a short time, for things have been allowed to drift too long; but by the State control of importation of cattle, and of dairy conditions the end will be at last attained. And, when it is, the credit will be largely due to the efficient and faithful work of the medical milk commissions, which have labored so unceasingly since the first commission was appointed in Essex County, New Jersey, eighteen years ago.

WORK OF THE STATE DAIRY BUREAU.

By F. W. ANDREASEN, Secretary.

The aim and some of the duties of this Bureau are to work for improvements in the sanitary conditions of dairies and factories of dairy products, and to enforce the laws prohibiting adulteration of milk, cheese, and butter, and the use of chemical preservatives in dairy products. In this article I will only touch on the duties referred to above, and our efforts to perform these duties.

The greater part of the appropriation has been expended to better the sanitary conditions of dairies producing butter, or furnishing milk and cream to cheese factories and creameries, and also to improve the sanitary conditions of said factories and creameries. The work is progressing slowly because we have not enough inspectors, four being all that are regularly employed. If, at times during the year, we have more,

the force must be reduced below that number at other times, to make ends meet. There are now about ten thousand dairies in this State supplying milk or cream to factories, or making butter and cheese themselves, and it would take the four inspectors two years to visit all of them once. Of course some of these dairies must be visited many times, and the inspector must spend days with the district attorney and in court before any improvement is made.

There are a great many fine stables and dairy houses being built at the present time, and we have inquiries nearly every day as to the best way of building and how to meet the requirements of the law. But there are yet many that start in dairying without the necessary equipments and buildings, making no provisions for heating water in which to wash and sterilize their utensils, nor for a room in which to handle, cool, and store their product. To have these errors corrected has been our greatest fight.

The Boards of Health of municipalities that have their own dairy inspectors, have greatly assisted us in our work. They can get better results, first, because they have time to visit dairies more frequently, and secondly, because they can recommend that the permit to sell milk in the municipality be taken away unless the milk producers comply with the rules adopted by the Board of Health. We can demand improvements but must rely on the district attorneys, judges, and juries to enforce our demands.

With the creameries we have had little or no trouble. The small and poorly constructed plants are fast dropping out of business, or being turned into skimming stations, and fine new plants, equal to the best creameries in any country, are taking their places. In some old plants so many changes were ordered by the inspectors that the owners tore them down and built new. At times some of the employees get negligent, but, if the attention of the management is called to it by the inspector, the trouble is nearly always corrected at once. The creamery managers are in perfect accord with the State Dairy Bureau as far as the sanitary conditions are concerned and give us their moral support. Some years ago, when inspection could not be made otherwise, they assisted us financially as well. The great trouble at this time is that they are demanding inspection on every side and we have not enough men to accommodate them all. There are about two hundred creameries in the State, and some of them have as many as six hundred patrons. We must at present work principally in the most concentrated dairy districts to accomplish the most good at the least expense.

The bureau has done considerable work throughout the State collecting samples of milk to determine whether the law prohibiting adulteration and the use of chemical preservatives is being violated. At the time (1907) and for some time after the law was passed the use of boron was very common. During the last year, though every sample of milk collected has been analyzed for preservatives, only three have been found containing formaldehyde and seven containing boron. Much of the milk sold by milk dealers is below the standard established by law in this State, and about fifty per cent of the samples taken from restaurants and hotels in some of the cities are below standard. Some are low in both fat and solids not fat.

In the majority of cases brought by this bureau the defendants have plead guilty and paid the fine, but some complaints have been filed

where it appears that the cases will never come up for trial. Others have been dismissed, some have been heard and judgment suspended, and others heard and taken under advisement, and though months have passed, we have not been able to learn what the decision was.

Restaurants and hotels can usually buy good milk from dealers or dairies for sixty cents a can containing twelve quarts. A glass, such as is usually served for five cents, is about one third of a quart. There should be enough profit in this business to assure their customers receiving good, fresh, and pure milk. We believe that the law as it now stands is just and should be enforced.

THE MEAT QUESTION IN CALIFORNIA.

BY WILLIAM F. SNOW.

When the author of the "Jungle" wrote his story of the Chicago packinghouses in 1906 he had in mind the employees' problems of sociology and the hygiene of occupation rather than the marketing of healthy meat. It is probable that he viewed with much impatience the manner in which the public passed over the moral of the tale and proceeded to safeguard its own stomach.

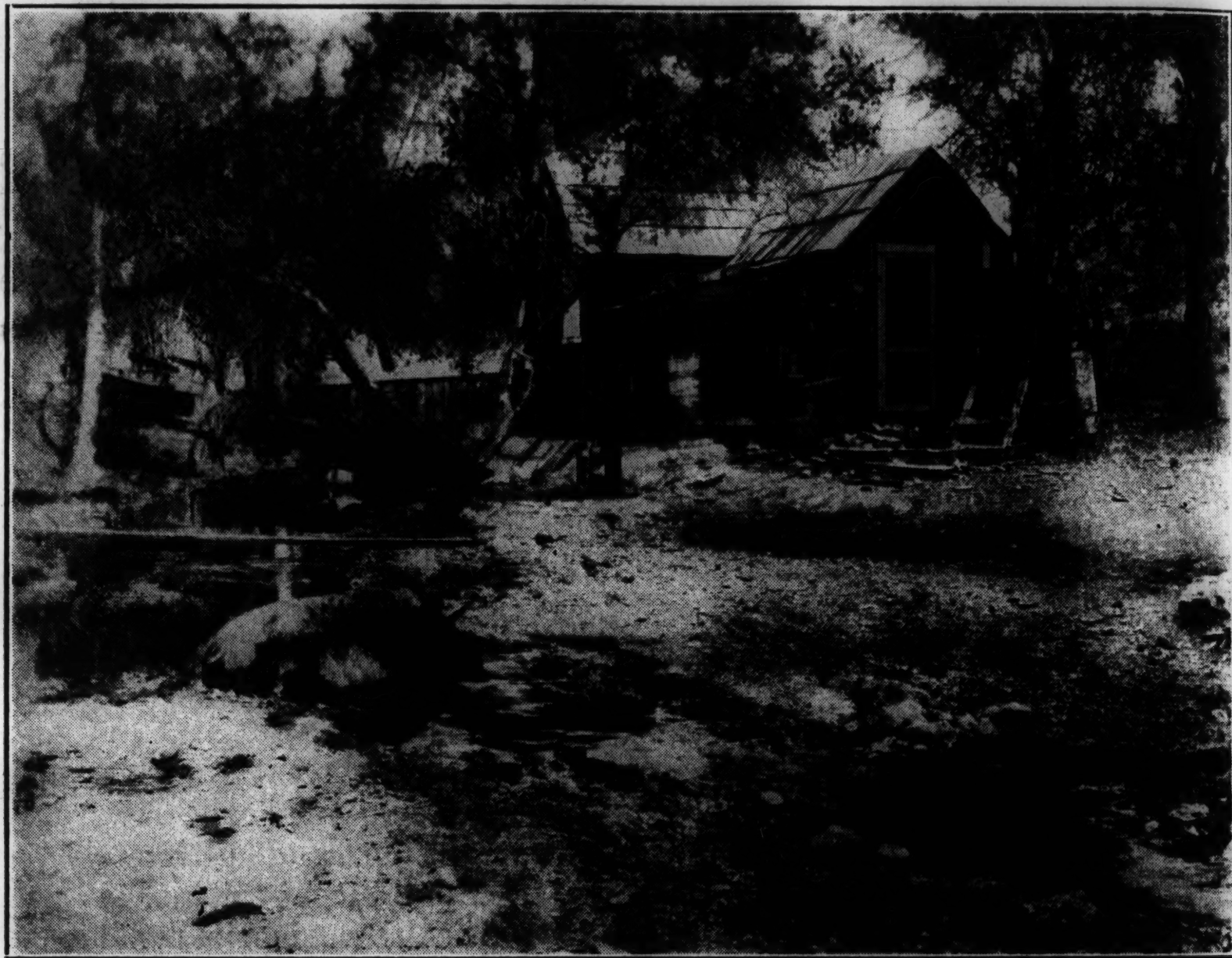
This story may have served as an accidental stimulus to crystallize public action, just as any foreign substance dropped into certain liquids on the point of crystallization will cause their instantaneous solidification. Be this as it may, since the appearance of Sinclair's book there has been a steady effort on the part of the public to improve the meat supply.

Long before this activity on the part of the public the United States Department of Agriculture began the scientific investigations and administrative experiments necessary for developing a satisfactory and economical method of public health control of the meat supply. The demands of foreign commerce induced congress to enact the laws governing the inspection of meat for export trade, and ultimately to extend this supervision to interstate shipments of meat. This has had two results: (1) It has insured only clean, healthy American meats in foreign markets, and has made possible these same meats in a few of the markets in the larger cities of our own country. It has proved that such inspection may be made effective without increasing the consumers' price for meats. (2) It has also placed a premium on selling animals of doubtful health to small slaughterhouses for sale to local markets not under Government supervision.

California needs but to standardize the inspection of her intrastate meats in accordance with the Federal requirements, to have a clean, healthy meat supply throughout the State. This, of course, involves the solution of many local difficulties, and the development of inter-county coöperation, if it is to be accomplished without great expense to the taxpayers or increased cost of meat. Yreka, Oakland, San Francisco, and Los Angeles have been making steady progress in the fight for adequate meat legislation. Many other cities and towns are making less strenuous efforts in the same direction. Redding is planning to establish a union slaughterhouse reservation, and many cities have been very energetic in demanding that their slaughterhouses clean up.

The education of the public in the essentials of a wholesome meat supply should be pushed with far more vigor than has been evidenced in the past. Both those who believe in a meat diet and those who oppose all slaughtered meats should find no difficulty in uniting in this work.

If the interests of the small butcher and his independence from the large slaughterhouses are to be conserved it will be necessary to establish municipal slaughterhouses under the administration of established districts. There are now in operation in the United States a number of such slaughterhouses for communities of 20,000 to 30,000 population. It has been found possible to make some of these self-



This is the residence of the employees of a slaughterhouse on one of the tributaries of the Sacramento river, a short distance above the water intake of a thriving city. The hog is less dangerous than the human users and abusers of the stream. On the stream below the lower right hand corner is the slaughterhouse, which uses the stream for the twofold purpose of wash water for the "wiping rags" and as a carrier for the refuse.

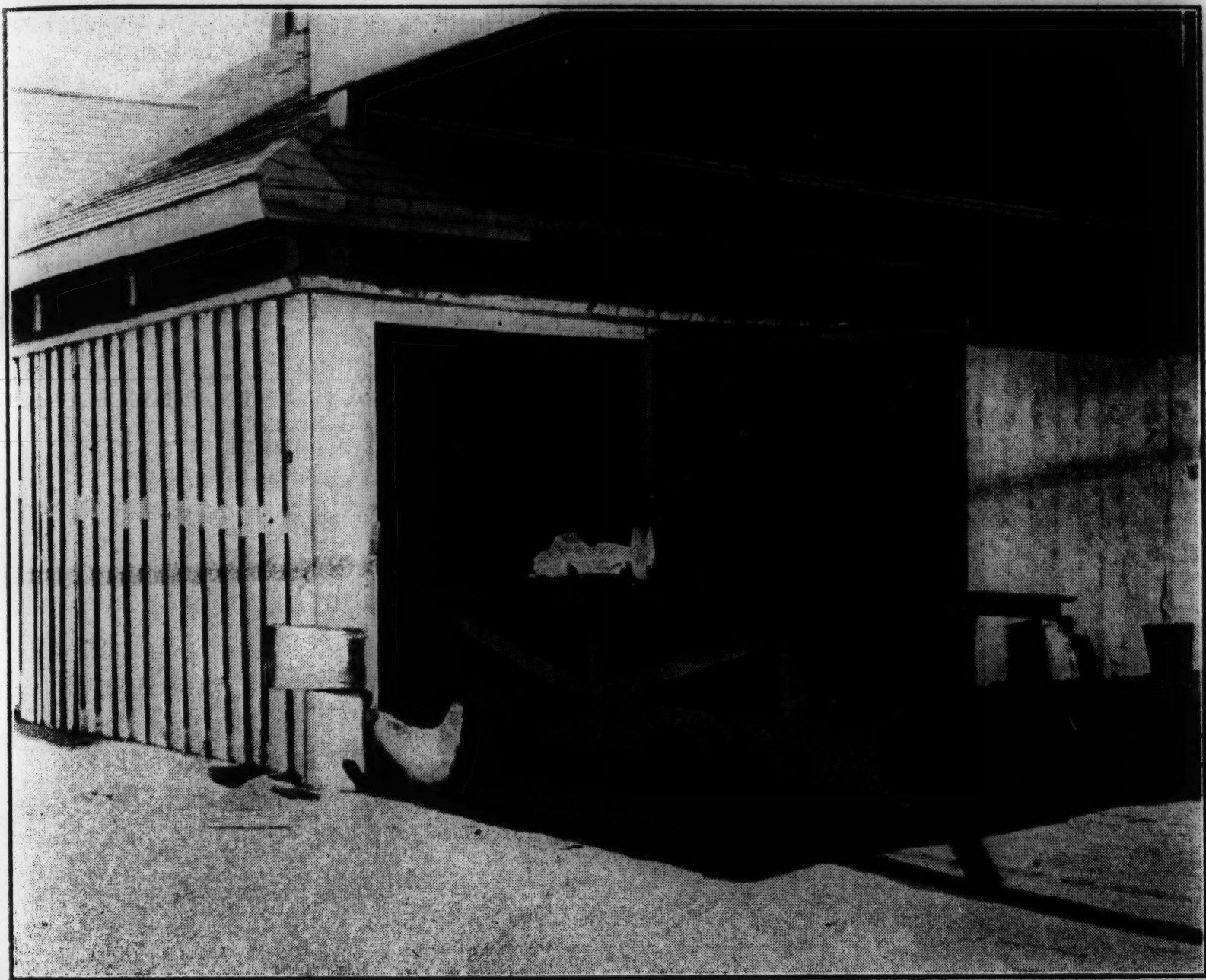
sustaining on a very low schedule of fees. The general plan of these municipal abattoirs is to build and equip a modern sanitary slaughterhouse, place it under the management of a competent expert, and arrange a schedule of fees for slaughtering the various animals used in the meat trade. The meat retailer then deals directly with the cattleman or farmer, either buying his animals on the hoof and taking his own chances on those condemned on being slaughtered, or buying them dressed, in which case the farmer who produces them must stand the loss of those condemned at slaughter. The city or sanitary-meat district plans only to charge enough to cover the cost of maintenance and interest on its investment.

The time will probably come when an awakened public will demand

the universal adoption of some such plan, and the present unsightly, unsanitary, intolerable nuisances dotted all over California's watersheds and known as "the slaughterhouses" will be only a matter of unsavory memory.

But this time has not yet arrived! There must be stepping stones. The following inexpensive plans for slaughterhouses in California are given as illustrations of what may reasonably be demanded by any community, pending the establishment of a municipal abattoir:

THE MADERA PLAN.—This is represented by a small slaughterhouse. The owner slaughters each week from two to four beeves, six to twelve sheep, and several hogs. His equipment consists of three divisions: a feeding-barn and corral, a killing shed,



This unique slaughterhouse cooling room is described in the accompanying article on the Madera plan. Note the double roof and the "ventilated" side walls.

and a cooling house. The location provides enough slope for drainage. The feeding barns are only remarkable because they are clean. The killing shed is equipped with the customary large, overhead hoisting wheel and general apparatus, but the floor is of tight-fitting hardwood planks, kept scrubbed like a good housekeeper's sink-board. The slope is adequate to carry all refuse and washings out to a cement floor, connecting by a narrow runway with the hogpens, and by a gutter with cultivated soil at some distance. The salting bed for skins is well arranged and apart from the central workroom. The furnace and scalding vat, and scraping board for hogs is conveniently adjacent to the workroom but is separately drained and floored with cement. All these and other details are common to the majority of carefully conducted slaughterhouses in California, but the cooling house is unique. A small iron track leads from the killing shed fifty feet to this cooling house. When the animal has been killed and dressed its body is placed on a flat-car which is pushed along this track to the cooling house where it is finally quartered and hung awaiting transportation to the refrigerator of the retail butcher.

The familiar framework of a California tank and windmill forms the four sides of this cooling house. The ground inside this frame and for ten inches outside it is cemented, the outside ten inches being arranged as a gutter leading to one outlet

point which leads to the field. The four sides of this frame are screened with ordinary iron fly screening from the floor to a height of about ten feet. At this height there is a pyramidal board roof which not only covers the screened enclosure but extends ten feet beyond on all sides. This roof is overlaid by another shingled one providing an air space of six inches between the two. The outer area surrounding the screened room, which is thus roofed over on all sides, is enclosed by six-foot boarded walls, but these boards are each placed at a two-inch angle by nailing one side to the joists and blocking out the other two inches, giving the appearance of the blades of a windmill. The result of these arrangements is that cool currents of air are not obstructed and the heating up of the room is prevented by the double roof.

Just outside the wire screening of the inner room below the roof a perforated iron pipe runs round the four sides. These perforations are one inch apart. Hung from this pipe are long jute curtains that reach to the cement gutter at the floor level. This iron pipe is connected with one from the water tank above. Thus these curtains may be kept constantly saturated with water without waste. Inside the screened and curtained room thus constructed the meat racks and work table are arranged.

Not only is this room cool and sweet, but it is free from dust and has unrestricted circulation of air.

This is simply the California ranch house cooler magnified, but might well be imitated with small expense and great benefit by every small butcher and dairyman in the San Joaquin and Sacramento valleys.

THE COALINGA PLAN.—Coalinga has an energetic Health Board and progressive meat dealers. The essential features of the Coalinga plan are (1) a continuous cement working floor for all the processes of the work, and a roof for protection from the sun, and for support for the overhead apparatus; (2) an overhead suspension trolley is required, with necessary switch tracks from the killing runway to the scalding kettles, the central working floor, and the "finishing" and cooling room. There are no walls except that the "cooling room" is required to be walled and ceiled with wire fly screening. The meat is required to be removed as soon as possible to the refrigerator rooms of the local butchers. Hogs are not permitted to be fed near the slaughter-platform and all washings are required to be flushed from the entire floor and carried seventy-five feet to a catchment basin and alternating ditch system of irrigation.

These are but two of many ingenious plans which have been or can be developed if the public demands sanitary slaughterhouses. Such a demand is undoubtedly the first step toward general improvement of California's meat supply. The next step is to convince the public that if it is worth while to spend \$3,000,000 annually for Federal meat inspection in order to ensure healthy meat for foreign and interstate commerce, it is doubly important to spend such sums as may be necessary to similarly inspect and safeguard the intrastate meat supply.

THE NEED OF MUNICIPAL MEAT INSPECTION.

By GEORGE S. BAKER, M.D., Inspector in charge, Bureau of Animal Industry,
San Francisco.

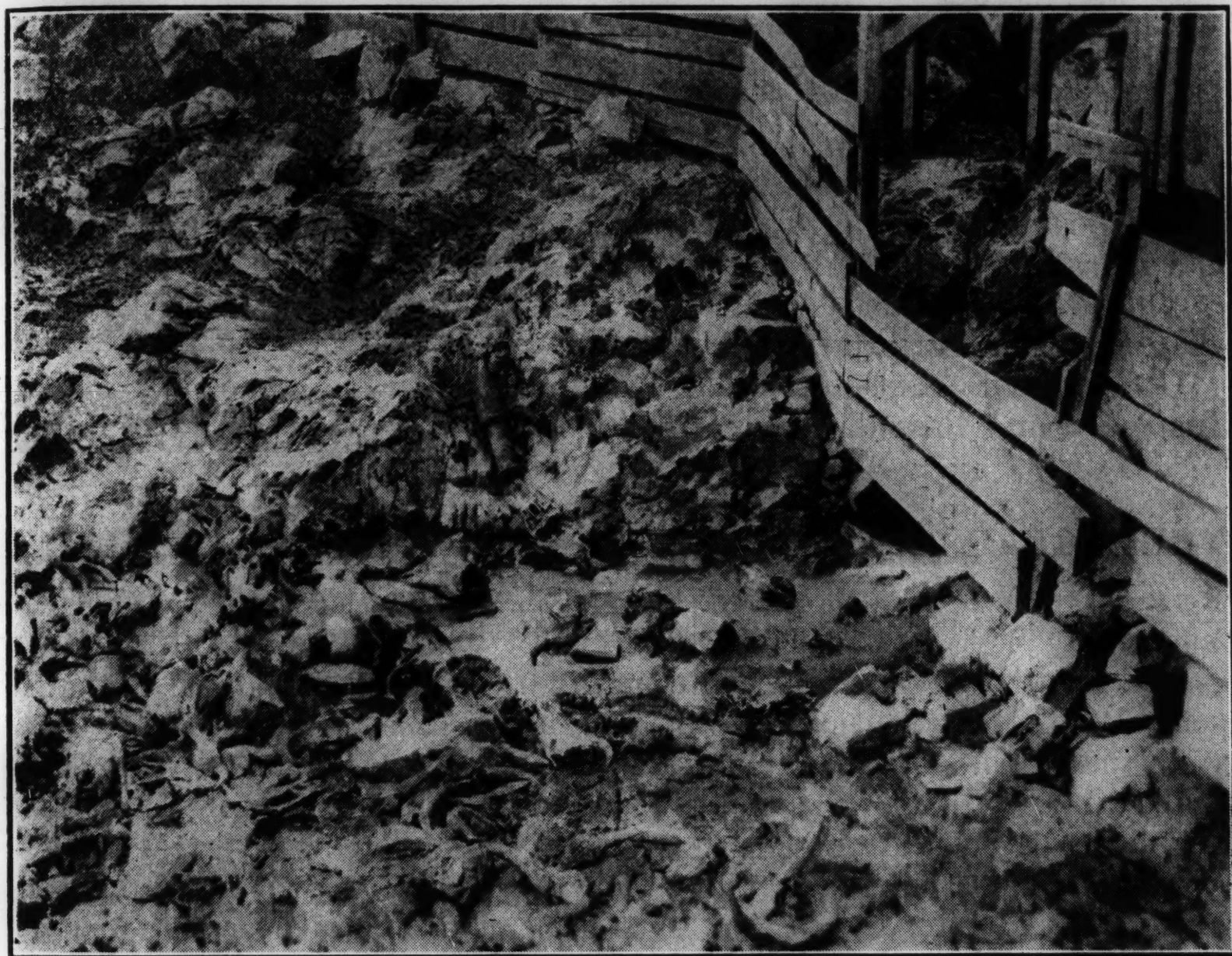
The Federal Government, through the Bureau of Animal Industry of the United States Department of Agriculture, maintains a very rigid inspection of meats and meat food products which enter into interstate or export trade. It has no jurisdiction over the local market, except that, when a plant is working under Federal control, everything produced by this plant is subject to inspection, regardless of whether the product is to be shipped out of the State or not. In this way it protects the local market as much as possible, but it can not force its inspection upon a house doing business wholly within a State.

In a state as large as California there is naturally a very large number of slaughterers and manufacturers of meat food products, sausages, lard, etc., who do not come under the supervision of the Federal inspectors. Also, under the act of congress providing for the

inspection of meats, the farmer and retail butcher and dealer are exempt from the operation of the law; so that unless the State or the municipality provide inspection, the people are without any protection from diseased meats, so far as these local dealers are concerned.

There are only four points in California where Federal inspection is maintained: San Francisco, Los Angeles, Pomona, and San Diego, and at every one of these points the uninspected plants outnumber those working under Government supervision, and, in the aggregate, far exceed the inspected plants in their annual output.

In addition to inspecting the animals slaughtered and their products, Federal inspectors exercise a very close supervision over the sanitation



Where babbling brook and slaughterhouse come together the babbling brook "gets hurt"—and so does the meat. The surest progress against such unsightly and dangerous conditions as this will be made through showing the people fearlessly just where their meats come from, and asking them to discriminate between meat from clean and inspected slaughterhouses and—*the other kind*.

of every part of every establishment. Inspection is not begun until the plant is in proper sanitary condition, and is discontinued unless the standard set is maintained. No such conditions are tolerated in a Government inspected plant as are the common rule in country, or even in city, slaughterhouses not working under Federal control. No offal of any description is allowed to accumulate about a Government inspected plant and the plant is cleaned from top to bottom every day. The houses are effectively screened to exclude flies.

What a different picture is presented by the average uninspected house. Offal is thrown about and left to decay on the premises, or is dumped into the basement, or just outside the building, where it is fed to hogs. Rats infest the premises and the place swarms with flies. This

association of hogs, rats, and offal forms an ideal condition for the propagation of disease, some forms of which are transmissible to man,—trichinosis, tapeworm, etc. Where hogs are fed upon beef offal, they are sure to contract tuberculosis.

No diseased animal gets by the Government inspector. The seller and buyer have both learned this, with the result that the latter refuses to purchase apparently diseased stock except subject to inspection. The seller has learned that when his visibly diseased animals are condemned in a Government inspected house, he is paid only the value of the hide. The natural result follows: most of the dairy cows, which are suspected of being tubercular, go to the plants not working under Federal inspection, and the meat is undoubtedly sold to the unsuspecting public at the same price as Government inspected meat.

The remedy for this very undesirable state of affairs is the municipal slaughterhouse, where everything is killed under the direct supervision of the municipal authorities. Such municipal slaughterhouses or abattoirs are of direct benefit to the slaughterer, as they furnish facilities for disposing of offal or by-products at a profit, which the small butcher can not afford to provide for himself.

The consumer must consider the above conditions when buying other than Government inspected meats.

Government inspected meats all bear a brand reading, "U. S. Inspected and Passed."

THE SPREAD OF TUBERCULOSIS THROUGH MILK AND MEAT.

By R. G. BRODERICK, M.D., Secretary San Francisco Association for the Study and Prevention of Tuberculosis, formerly Health Officer San Francisco.

The identity of tuberculosis in man with that in animals is not as yet settled, although the majority believe the disease to be the same. It is well known that other animals, including calves and pigs, are infected by drinking milk from tuberculous cows, and the possibility that man and especially children may be similarly infected, is so great that to disregard it on the ground that it has not yet been proved, approaches criminal negligence. The fact that milk when it reaches the consumer is the yield of many cows, a certain proportion of which are tuberculous, and that it is generally consumed raw, especially by children, makes the opportunity greater for the dissemination of the tubercle bacilli through this product than through any other article of diet. That cases of tuberculosis, especially among the young, are not oftener traced to the milk supply is due to the insidious development of the disease, as well as the difficulty of tracing the milk to its origin.

Milk is the great factor in the spread of tuberculosis among cattle, it being stated that 90 per cent of tuberculosis in cows originates from feeding with infected milk. The separation of calves from cows immediately after birth, and the proper heating of the milk given them, offers the best plan yet devised to control the spread of bovine tuberculosis. The prevalence of tuberculosis in dairy herds is more widespread than generally known. Out of a herd of 58 cows, which were apparently in perfect health, 50 reacted to the tuberculin test. In another herd containing 124 cows, 95 reacted. The channels through which the milk may become infected by the tubercle bacilli, are, first,

from a tuberculous udder or mammary gland; second, through the urine; third, the feces, which is the most common.

Notwithstanding that such eminent authority as Robert Koch has stated that it is not worth while to combat bovine tuberculosis in the interest of public health, evidence of the transmission of the disease to man is not wanting, Theobald Smith having found that half of certain forms of tuberculosis in children, especially of the glands of the neck and abdomen, are due to infection from milk. The situation warrants enforcement of firm, effective measures for the protection of the milk supply. The difficulties must be met by a plan which will permit of gradual improvement, for even with a bountiful supply of healthy cows available the eradication of tuberculosis is a task that will take years.

The danger from eating tuberculous meat is second in importance only to that of milk. Although the tubercle bacilli are destroyed by thorough cooking, this may not occur when the meat is eaten rare. About one half of all animals slaughtered for food in the United States are inspected by the Bureau of Animal Industry. Of this number about two and a half per cent of hogs and one per cent of cattle are found to be tuberculous. The percentage of sheep infected with this disease is infinitesimal. As all meats intended for interstate and for foreign trade must bear the government stamp, those animals that can not pass government inspection and which are intended for food will be sold to unsupervised slaughterhouses and will be consumed within the state. It is needless to add that those abattoirs having government inspection use the greatest care in selecting animals for slaughter in order to avoid loss through condemnations. These evils can only be corrected by having local ordinances framed whose standard of inspection will be equal to that of the United States Government. All carcasses should be examined immediately after slaughter by inspectors who should be veterinarians qualified to determine by thorough examination of the entire carcass whether the animal is fit for food. Especially is this true in tuberculosis as the muscular tissue is but rarely affected in this disease. The thorough inspection of meat requires a large force of inspectors. This is made more difficult by slaughterhouses being generally some distance from one another. If municipalities would designate certain districts within the confines of which slaughterhouses should be constructed, the difficulty of maintaining the same in sanitary condition, and the inspection of all slaughtered animals and meat food products would be materially reduced.

THE FEEDING OF GARBAGE TO ANIMALS INTENDED FOR HUMAN FOOD SUPPLIES.

The practice of feeding garbage to hogs is very general throughout California. For the past two years some careful observations on this practice have been made, but no final conclusions have yet been formulated as to the degree of restriction or measures of control which should be enforced. The following letter indicates that the United States Department of Agriculture considers the practice a source of spreading

disease. Federal officers are now investigating certain phases of garbage feeding in the State, and their report will be full of interest.

DEPARTMENT OF AGRICULTURE, OFFICE OF THE SECRETARY.
WASHINGTON, D. C., August 25, 1910.

DR. GEORGE H. KRESS, *Secretary, Public Health Commission, Pasadena, California.*

SIR: Replying to your letter of the 4th instant, there is no doubt but what the feeding to hogs of unselected garbage without sterilization is a potent factor in the spread of disease. Even selected garbage should be sterilized before feeding. I will take this matter up with our inspector in charge at Los Angeles, and if these hogs are killed at any establishment where this Department is conducting inspection will have a special effort made to note the condition of these particular hogs at the time of slaughter.

Very respectfully,

WILLIAM L. MOORE, Acting Secretary.

COMMENTS.

A Pioneer Document on Pure Milk.—Looking over the past records of campaigns against impure milk it is indeed a pleasure to find that the California State Board of Health has contributed no small part to our general knowledge upon the subject, and that enthusiasm in this respect has not been lacking. It is strange that it takes so many years of hard, conscientious work on the part of a few enthusiasts to inculcate ideas of cleanliness into the minds of the general public. In 1896 the California State Board of Health published a most valuable pamphlet on "A Study of Milk in Relation to Health and Disease," by Dr. Geo. M. Kober, United States Army, at that time stationed at Fort Bidwell, California, but now Dean of the Georgetown University School of Medicine, Washington, D. C. This thorough and extensive monograph of 52 pages could well be copied verbatim at the present day. The ideas which he advances are those which have been adopted in many places, and have gained material ground in others. Dr. Kober at that time made a very extensive review of the bibliography, and quotes many valuable statistics to prove his points. The methods which he advocates are those which have been largely placed in practice to-day, and the importance of the subject, which his discernment fourteen years ago realized, has forced its demands upon an apathetic profession. Quoting analyses of milk sold in New York City he states that an average dilution with 33 per cent of water was found, the fraud amounting to \$10,000.00 per day.

To quote directly from Dr. Kober's article:

"The State Inspector for New York found an average of 12 per cent of water added and 20 per cent of cream removed * * *. These facts indicate the desirability of stringent laws governing the milk traffic as a protection to the pocket of the consumer; but an analysis of the evidence presented in the following pages, together with the fact that milk constitutes one of the best culture media for disease germs, clearly shows that the dairies should be under sanitary control to prevent the propagation of disease by infected milk. This sanitary control should include inspection by competent veterinarians, so that the milk of all animals suffering from disease may be excluded from the supply."

"The cows should be groomed daily and the teats and udders washed before milking with water previously boiled; and the requirements of cleanliness should apply with equal force to the milkmen, both in their persons and clothing."

"All persons engaged in handling the milk should be free from disease. Milk should not be permitted to leave a farm or dairy during the existence of typhoid fever, diphtheria, or scarlet fever among the employees and inmates. Dr. S. C. Busey and the writer, in a report on morbid and infectious milk, have recently tabulated no less than 240 such epidemics, all traceable to the milk supply. Of

these, 187 were reported by English, 31 by American, and 9 by Scandinavian observers; while 8 came from German, 3 from Australian, and 1 each from French and Swiss sources; and right here it is suggested that the infrequency of milk typhoid in France and Germany is due to the fact that milk is rarely used in its raw state on the continent of Europe."

"To prevent loss under restrictions necessary during the prevalence of infectious disease on a farm, the utilization of the milk may be authorized for butter production after sterilization under the direction of the health board."

"The milking should be done in a dust-free atmosphere—preferably on cemented floors previously sprinkled in order to reduce the number of germs to a minimum."

It is with no small amount of pride that the State Board of Health to-day looks over this pamphlet and recognizes the excellent work of its author, far in advance of his time. It seems strange that a campaign of this kind, the necessity for which has been clearly shown, should be so many years in development. At the present time the great truths which Dr. Kober so tersely states are but coming home to the people. The seeds of sanitary reform have long been planted; the fruition is slow and surrounded by innumerable difficulties.

Certified Meat as well as "Certified Milk."—The consistent, well-organized efforts of the medical milk commissions throughout the United States have popularized the value of a pure, clean milk supply, and the meat inspection service of the Federal Government has done much toward making a pure, clean meat supply available in a large percentage of communities, but the people do not yet realize that "U. S. Inspected" means for meat what "certified" means for milk. At the November meeting of the California League of Municipalities it is hoped to have a full discussion of the establishment of municipal abattoirs under civic control, and operating under standards of sanitation and disease elimination, which shall be equal to those set by the Federal Government for interstate and foreign commerce.

THE CONSERVATION MOVEMENT.

1. RECENT ADVANCES IN SANITARY ENGINEERING.

By NED BAKER, Engineer Inspector, State Board of Health.

BIDDING FOR ENGINEERING PLANS.

One of the small towns in the southern part of the State has advertised for bids from engineers for furnishing plans for a sewer system. The report specifies a small maximum figure, but this may be in error and it is to be hoped it is, for such a system of bidding on furnishing engineering plans can not be too strongly condemned. It is degrading to the engineering profession and bids are never presented by engineers who have a high regard for their calling. The man who makes designs for engineering works, does so with the effort to get the best structure for the purpose at the most reasonable cost. The good engineer will accomplish this and his services will well be worth the charge he makes for them.

In works of sanitary engineering, where the life and health of the people in the community are dependent on the success of the works to be built, it is especially unwise to encourage poor designs by forcing the engineers to bid for them. The furnishing of materials and work of construction may be done under contracts that are let by competitive bids, because these things must conform to certain specifications laid down by the engineer. The city or town will always have an inspector on the works during construction to see that everything is up to standard. But making the engineering plans is a very different matter, and the aim ought to be to have them done in the very best manner, with cost of plans as a secondary consideration. The cost of plans is never more than a small percentage of the total cost of an engineering project. To try to unreasonably cut down this cost is the very worst sort of economy. It is to be hoped that this practice of bidding for the making of engineering plans will not be encouraged.

THE MONTH'S PROGRESS IN SANITARY ENGINEERING.

Modesto. The bonds to furnish \$65,000 for the new sewer system were passed and work will be begun at once and pushed to completion as rapidly as possible. No contracts will be let but the work will be done by day labor under the direction of City Engineer Geo. H. Freitas, who made the designs.

Kingsburg. Plans have been prepared by Olmstead and Gillelen of Los Angeles for a municipal water system to cost about \$52,000. The system will include provisions for good fire protection, which will materially reduce the insurance premiums. The bonds will be voted on in November and little opposition is anticipated.

Santa Clara. The new sewage disposal plant is about ready to begin operation. It consists of a septic tank and a set of filters for completing the purification of the effluent. The filtering material is crushed stone, graded with the finer on top. The plant was built from designs of City Engineer C. E. Moore. It is one of the first plants for complete purification of sewage in the State and its results will be watched with a good deal of interest.

East San Jose. The septic tank and sewage filters are rapidly nearing completion. The plant is to treat the sewage of the incorporated town of East San Jose by septic tanks and contact filters. The structures are of reinforced concrete and will cost about \$3,000. Built after designs by Town Engineer H. B. Fisher.

Lordsburg. A municipal water system from plans of Olmstead and Gillelen.

Corning. The bond election to vote on \$21,000 for sewers and \$48,000 for water has been set for October 4th.

Biggs. An engineer's report gives the estimated cost of the proposed new sewerage system as about \$15,000.

Brawley in the Imperial Valley is to have a new sewer system to cost about \$18,000, and is calling for bids.

Sonoma has sold the bonds for the sewer system and now has a sum of \$20,546 to devote to that purpose.

Monterey is calling for bids on a reinforced concrete tank to have inside dimensions of 72 by 25 by 8 feet.

Newport Beach is advocating the need of a sewer system. Sewage is now emptying into the bay and is becoming a nuisance. The town recently voted \$10,000 bonds for water works.

Santa Barbara recently voted bonds amounting to \$200,000 for improving and extending its water supply.

Hanford is going to take up the question of remodeling the sewer system and building new sewage tanks, and has an engineer making preliminary estimates for the board of trustees.

2. NEW MEASURES IN PUBLIC HEALTH ADMINISTRATION.

The State Board of Health receives many requests for suggestions and for rulings on administrative regulations. Every community in California has its quota of citizens, who say "That seems to be an unreasonable and a queer way of doing things. They had different regulations where I used to live." By the time a child born on the farm under the jurisdiction of the County Health Officer, goes through the high school under the supervision of the City Health Officer, is subject to the control of the special health officer during his university course, and begins his business career under the jurisdiction of the health officials of another State, he is likely to have collected a series of experiences with conflicting health regulations. During the past year the Board has been studying the health regulations throughout the State, with a view to recommending standard regulations for all parts of the State. In a few instances definite rulings have been made.

The California League of Municipalities will meet November 16-19, 1910, in San Diego. The section of Health Officers is to be elaborated into an experimental conference of all California health officers, which is to be called by the State Board of Health. The standardizing of public health regulations will be the topic for one of the section sessions. Every board of supervisors and boards of town trustees will be officially requested to send their health officers or representatives of their boards of health to this conference, and it is hoped that much progress toward securing uniformity in the enforcement of public health regulations will be made. The full program for this conference will be published in the next issue of the Bulletin.

3. PROGRESS OF THE CALIFORNIA PUBLIC HEALTH LEAGUE.

The American Public Health Association met in Milwaukee, September 5th to 9th. The program included a series of ten papers and a discussion on "The Interrelation of National Organizations Working in the Interest of Health." The organizations represented were: American Medical Association; National Association for the Study and Prevention of Tuberculosis; Committee on the Prevention of Blindness, of the Russell Sage Foundation; National Housing Association; Ameri-

can Civic Association; National Conference of Charities; National Child Labor Committee; Playgrounds Association of America; American Public Health Association; National Association for Prevention of Infant Mortality; International Congress on Hygiene and Demography.

During the discussion and in conversations during the meeting many members of the association expressed favorable comments on the California plan of affiliation.

A new section of the American Public Health Association was formed, to be known as the "Section on Sociology." Mr. John M. Glenn, Director of the Sage Foundation, was elected chairman of the section; Mr. Frederick Almy, Secretary of the National Conference of Charities, was elected vice-chairman; Mr. Lawrence Veiller, Secretary National Housing Association, secretary; Dr. William F. Snow, Secretary California Public Health League, recorder.

The next meeting of the association will be held in Havana, Cuba. California's invitation was favorably received, but many of the members desired to go to Rome in 1911 for the International Congress on Tuberculosis, or to the International Hygienic Exhibit to be held in Dresden, and consequently did not want to make the long trip to the Pacific Coast and return before leaving for Europe. In 1912 the association will probably meet in Washington during the International Congress on Hygiene and Demography. Favorable comment was very generally expressed concerning California for 1913.

4. HEALTH CONSERVATION IN THE MAGAZINE, NEWSPAPER, AND BOOK.

By HERBERT COOLIDGE.

ARTICLES OF INTEREST TO PUBLIC HEALTH WORKERS.

Welfare Work of the Metropolitan Life Insurance Company. By Philip P. Jacobs in *The Survey* for August 13th. Describes in detail the field activities of a life insurance company which "thought it would be good business" to extend health education and to some extent medical treatment "to its industrial policyholders." An extremely valuable and suggestive article, especially for insurance men and public health workers.

The Farm; the Next Point of Attack in Sanitary Progress. By Allen W. Freeman, M.D., in *The Journal of the American Medical Association* for August 27th. Mentions several important results that can be obtained by sanitation extension to rural districts, and describes field educational methods now employed by public health authorities in Virginia. This article presents information of exceptional freshness and value. May be read with profit by public health authorities, especially those engaged in publicity work.

The Microbe as a Social Reformer. By Robert W. Bruere in *Harper's Magazine* for September. Tells how "the first municipal bacteriological laboratory in the world" was established in New York because of the cholera scare of 1892, and outlines the results growing out of this through which in New York the "general death rate has splendidly fallen." Describes how tenements have received light, air, enlightenment, social reform, and means of recreation because of warfare against

the tuberculosis bacilli and campaigns for reducing the infant mortality. This article can not be too highly recommended, as it is exceptional both in treatment and in subject-matter. The general reader will appreciate its contents and public health workers will find it of especial interest and value.

The Neglected Ethics of Sex. Under department "The Religious World" in the *Literary Digest* for August 27th. Outlines a movement pioneered in Rhode Island in which the religious, health, and school authorities of that state combine in inaugurating a campaign for sex education. The article deals with a unique situation and the topic considered is of universal interest. Leaders in health, educational, and religious movements will find here a particularly live line of thought.

The Motion Picture as a Social Worker. By Constance D. Leupp in *The Survey* for August 27th. Tells how the subject "Clean vs. Dirty Milk" is presented in a "dramatic human story" by nickel moving picture shows. This article contains valuable suggestions for public health workers.

Temporary Defeat of the Project for a New York State School of Sanitary Science and Public Health. In *Engineering News* for August 25th. Points to the need of a training school for sanitationists and public health workers, and outlines the "proper agency for this educational work" and the "methods to be adopted."

Fighting Ignorance With Pictures. By Douglas Sutherland in *The World To-day* for September. Tells how Chicago public health workers use cartoons to warn illiterate tenement mothers against feeding tea, coffee, beer, fruit, etc., to infants. A well written popular article of general interest. May be read with profit by city public health workers.

ARTICLES OF INTEREST TO PHYSICIANS.

Remarks on the Etiology and Pathology of Infantile Paralysis. By Francis Hernaman Johnson, M.D., Ch.B., R.N., in *Practitioner* for August. Discussion of infantile paralysis under the headings "etiological factors, nature of the morbid processes, and possibilities of contagion and hereditary transmission." A scientific article of timely interest in California. May be read with profit by persons having medical training.

"Physicians on the Carnegie Foundation Report. Under department "Science and Invention" in the *Literary Digest* for August 27th. Outlines statements of different medical men who condemn and defend Dr. Abraham Flexner's criticism of medical education in the United States. Of interest chiefly to physicians.

Cancer and the Doctors. Under department "What the World is Doing" in *Collier's* for September 3d. A short, concise outline of the conclusions resulting from the work of the Imperial Cancer Research Fund.

SCHOOL HEALTH PROBLEMS.

Therapeutic Value of Medical Inspection of School Children, in *The Journal of the American Medical Association* for August 13th. Advocates medical supervision on the ground that "if a community compels a child of school age to go to school, the same community must

protect that child from harm while obeying the community's mandates," and should also see to it that the children are physically fit to perform the tasks required of them. Asserts that the people of to-day have much less vitality than their forefathers, and that "if we are to have a robust nation a child should not be received as a pupil until he brings a certificate of apparent health and ability to withstand the confinement of school hours for the succeeding year." Makes the statement that in many cases permanent physical inefficiency is caused by the excessive strain of school and home life on growing children. An exceptionally readable article that deserves the attention of every physician, educator, and parent.

Testing Hearing of Pupils. Under department "Of Current Interest" in *The American Educational Review* for September. Explains a "simple method by which children may be tested as to their hearing in groups of fifteen." The record made by the children shows accurately "the acuteness of the hearing of each child as compared to that of his mates." An extremely valuable short article that deserves wide circulation among educators and others interested in medical school inspection.

How I Run My School: A New Departure in the Education of Public School Children. By William E. Watt, in *The Ladies' Home Journal* for September 1, 1910. Deplores the low health standard for school children and declares that "the good health of a child is worth more than what it is taught." States that air for school buildings is commonly drawn from intakes on the street level, is parched in the process of heating and in this state "robs children and teachers of vitality." The article contains physiological statements that are not scientifically sound, but it is full of practical suggestions and deserves to be widely read, especially by educators.

Back to the Open. Under department "Of Current Interest" in *The American Educational Review*. Describes a summer class in a park where city children assemble to make up back work and to receive kindergarten instruction and manual training. A suggestive short article that may be read with profit by all interested in educational problems.

VACCINATION.

Pennsylvania and Smallpox. Under department "The Week," in *The Outlook* for September 3d. An editorial statement citing Dr. Weir Mitchell, of Philadelphia, as saying that there is in Pennsylvania "an epidemic of prejudice against the only preventive which has ever been found effective in restraining the ravages of smallpox," and that statistics furnished by General Wood based on smallpox control in Cuba furnish "a piece of incontestable evidence in favor of the absolute immunity furnished by the harmless process of vaccination." In view of the recent controversy in California over vaccination this editorial will prove exceptionally timely in interest.

HEALTH OF CHILDREN.

The Young Mothers' Guide. A department in *The Ladies' Home Journal* for September, 1910, edited by Emelyn Lincoln Coolidge, M.D. Consists of published correspondence concerning the health problems

of very young children. A variety of every day baby culture questions are taken up in these columns, and letters from prospective mothers are answered by mail. Judging from the advice published in this issue this column is a dependable source of information.

The Wholesome Food for Children Aged from Three to Seven Years. By Jean Williams, M.D., in *Woman's Home Companion* for September. A concise and conservative treatise on the dietary of children. This article may be profitably read by all interested in the subject.

For the Lunch-box. Department in *New Idea Woman's Journal*. States that school children should be provided with food that is appetizing, nutritive, and hygienic, and gives directions and receipts for the preparation of lunches.

Lunch Hour in A New York School. By Mary Alden Hopkins in *New Idea Woman's Magazine* for October. An interesting and instructive popular article on the problems associated with providing luncheons for city children.

GENERAL HEALTH.

The Tooth Tinkers. By Roy McCardell in "*Hampton's Magazine* for September. Exposes the swindles practiced by "fake dentists," and outlines the fraudulent career of "Painless Parker" and other "painless pioneers." Is written entertainingly and may be read with profit.

Why I Stopped "Being a Beauty Specialist:" A Few Things I Found Out in Some "Beauty Parlors." In *The Ladies' Home Journal* for September 1, 1910. This article is unsigned for obvious reasons. It is a seemingly bona fide record of the investigations of a young woman who secured employment as assistant to "beauty specialists." Grave charges are made as to unscrupulous and dangerous practices in the shampooing, bleaching, and dyeing of hair, the removal of superfluous hair, "face skinning," and the reckless use of uncleaned brushes, combs, manicuring and chiropody instruments that have been in contact with persons suffering from transmissible diseases. This article may be profitably read by any one who contemplates becoming the client of any unknown so-called specialists.

Hygiene and Morality. Reviewed by Anna Garlin Spencer in *The Survey* for August 27th. A comprehensive review of a work on venereal diseases with extended comment on discussions of the social questions involved. This article will interest the general reader.

The Popular Outdoor Sleeping Porch. By Theodore M. Fisher, in *The Ladies' Home Journal* for September 1, 1910. A page of illustrations which will be of especial value to those who contemplate building.

TYPHOID.

Present Day Problems and Progress in Prevention of Typhoid Fever. By Walton Forest Dutton, M.D., in *The Journal of the American Medical Association* for September 3d. Advocates measures for controlling typhoid "carriers;" and with the aid of diagrams and reproduced photographs illustrates the principles that should govern the location, digging, and casing of wells, and the location and construction

of privy vaults, cesspools, etc. This article will interest physicians and health officers, and will be easily comprehended by the lay readers.

DIET.

Elie Metchnikoff and His Long-life Sour-milk Bacillus. Under department "Leading Articles of the Month" in *The American Review of Reviews* for September. Short outline of Metchnikoff's life and work, and statement and criticism of theory that old age is caused by poisons produced by waste products in the alimentary canal, and that sour milk bacteria retard old age by relieving this fermentation.

Some Stomachs I have Known. The Way to Health. By Dr. Eugene Yates Johnson in *The World* for September. Tells how some people abuse their stomachs and describes the conditions that arise from their abuse. Contains references to disease conditions that are unpleasant, but the matter presented is of exceptional value and may be read with profit by all interested in this line of study.

CITY HEALTH PROBLEMS.

Good Tenements for a Million People: The Story of New York's Successful Fight for Better Housing. By Emily Wayland Dinwiddie in *The World's Work* for September. A comprehensive, illustrated article showing the conditions before and after tenement reform in New York, and outlining the legal and financial means by which improvements have been accomplished. Of considerable general interest.

"Do it for Rochester." By Anna Steese Richardson in *Woman's Home Journal* for September. Tells how one man aroused the people of Rochester, and describes resulting improvements in sanitation and the agencies that conserve the health of children and prepare them to work and live. A well written popular article well worth reading.

TUBERCULOSIS.

A Floating School. In *The American Educational Review* for September. A short article which tells how tuberculosis is fought by providing a floating school for tenement children.

INDUSTRIAL HEALTH PROBLEMS.

Industrial Betterment. By H. F. J. Porter, in *Cassier's Magazine* for September. Considers the "general administration, selection, education and stimulation of workmen; their health, housing, society, and protection" from the standpoint of industrial efficiency. Employers, industrial managers, and foremen will find this article particularly worthy of consideration.

DEPARTMENT REPORTS.

REPORT OF BUREAU OF VITAL STATISTICS FOR AUGUST.

GEORGE D. LESLIE, Statistician.

Marriages.—The marriages reported for August number 2,114, as compared with 1,879 for the same month last year. For an estimated State population of 2,056,190 in 1910, the August total represents an annual rate of 12.1 per 1,000 inhabitants, against 11.9 for July.

The monthly totals were highest for the following counties: Los Angeles, 479; San Francisco, 433; Alameda, 195; Orange, 100; Marin, 79; Sacramento, 75; Santa Clara, 63; Fresno, 62; and San Diego, 59.

The aggregate for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo) was 762.

Births.—For August there were reported 2,773 living births, representing an annual birth rate of 15.9 per 1,000 population, as compared with 15.4 for the preceding month. The corresponding total for the same month the year before was 2,630.

The totals were highest for the following counties: Los Angeles, 704; San Francisco, 545; Alameda, 303; Sacramento, 130; Santa Clara, 103; Fresno, 83; San Bernardino, 61; and San Diego, 57.

Altogether 1,763 births were registered in the twenty-six freeholders' charter cities, the leading cities being as follows: San Francisco, 545; Los Angeles, 502; Oakland, 204; Sacramento, 95; Berkeley and San Diego, each 43; Fresno, 38; Pasadena, 35; Alameda and San Jose, each 32; and Long Beach, 25.

The aggregate for San Francisco and the transbay cities (Alameda, Berkeley, and Oakland) was 824, and for San Francisco and the other bay counties was 919. Similarly, the total for Los Angeles and neighboring chartered cities (Long Beach, Pasadena, and Santa Monica) was 577, and for the entire county was 704.

Deaths.—Exclusive of stillbirths, altogether 2,549 deaths were reported for August, this number including 177 delayed certificates for deaths in July or earlier months. The 2,549 deaths give an annual death rate of 14.6 against 14.8 for the preceding month. The corresponding total for the same month last year was 2,339.

The August totals were highest for the following counties: Los Angeles, 521; San Francisco, 501; Alameda, 256; Sacramento, 83; Santa Clara, 80; Fresno, 71; San Bernardino, 66; San Joaquin, 64; San Diego, 58; and Sonoma, 55.

There were altogether 1,432 deaths in the twenty-six chartered cities, the highest totals being as follows: San Francisco, 501; Los Angeles

325; Oakland, 160; Sacramento, 54; San Diego, 51; Berkeley and Fresno, each 34; and San Jose and Stockton, each 29.

The aggregate for the urban district (San Francisco and the transbay cities) was 703, and for the entire metropolitan area (San Francisco and the other bay counties) was 851. Similarly, the total for Los Angeles and neighboring chartered cities was 376, and for the whole county was 521.

Causes of Death.—The following table shows the distribution of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: August.

Cause of Death.	Deaths: August.	Proportion per 1,000.	
		August.	July.
ALL CAUSES.....	2,549	1,000.0	1,000.0
Typhoid fever	51	20.0	19.0
Malarial fever	17	6.7	4.3
Measles	4	1.6	4.7
Scarlet fever			1.6
Whooping-cough	30	11.8	18.2
Diphtheria and croup	18	7.1	8.1
Influenza	3	1.2	0.4
Other epidemic diseases	18	7.1	4.7
Tuberculosis of lungs	322	126.3	111.3
Tuberculosis of other organs	47	18.4	24.1
Cancer	145	56.9	73.4
Other general diseases	113	44.3	39.2
Meningitis	41	16.1	11.3
Other diseases of nervous system	219	85.9	75.7
Diseases of circulatory system	401	157.3	167.3
Pneumonia and broncho-pneumonia	131	51.4	48.5
Other diseases of respiratory system	46	18.0	15.5
Diarrhea and enteritis, under 2 years	84	32.9	40.8
Diarrhea and enteritis, 2 years and over	21	8.2	10.1
Other diseases of digestive system	134	52.6	50.9
Bright's disease and nephritis	149	58.5	59.4
Childbirth	30	11.8	8.9
Diseases of early infancy	96	37.7	36.1
Suicide	62	24.3	19.0
Other violence	244	95.7	100.1
All other causes	123	48.2	47.4

For August there were reported 401 deaths, or 15.7 per cent of all, from diseases of the circulatory system, and 369, or 14.5 per cent, from various forms of tuberculosis, heart disease thus leading tuberculosis considerably.

Other notable causes of death in August were as follows: Violence, 306; diseases of the nervous system, 260; diseases of the digestive system, 239; diseases of the respiratory system, 177; Bright's disease and nephritis, 149; cancer, 145; and epidemic diseases, 141.

The deaths from epidemic diseases were as follows: Typhoid fever, 51; whooping-cough, 30; diphtheria and croup, 18; malarial fever, 17; and all other epidemic diseases, 25. Typhoid fever was the leading epidemic disease for August, as for July and June.

The deaths from the three leading epidemic diseases reported for August were distributed by counties as follows:

TYPHOID FEVER.		WHOOPIING-COUGH.		DIPHTHERIA AND CROUP.	
Alameda.....	2	Alameda.....	4	Alameda.....	1
Calaveras.....	1	Calaveras.....	1	Fresno.....	3
Colusa.....	1	Contra Costa.....	1	Los Angeles.....	2
Fresno.....	6	Fresno.....	1	Marin.....	1
Humboldt.....	1	Humboldt.....	1	Mendocino.....	1
Kern.....	1	Los Angeles.....	4	Nevada.....	1
Kings.....	3	Mendocino.....	2	Orange.....	1
Lassen.....	1	Merced.....	1	Placer.....	1
Los Angeles.....	11	Monterey.....	1	Sacramento.....	1
Mendocino.....	1	Napa.....	1	San Benito.....	1
Napa.....	1	San Francisco.....	4	San Francisco.....	2
Orange.....	3	San Joaquin.....	1	Shasta.....	1
Riverside.....	1	Santa Clara.....	3	Solano.....	2
San Bernardino.....	1	Siskiyou.....	1		
San Francisco.....	9	Solano.....	1	Total.....	18
San Joaquin.....	2	Tulare.....	3		
San Luis Obispo.....	1				
Santa Cruz.....	2	Total.....	30		
Stanislaus.....	2				
Tulare.....	1				
Total.....	51				

Geographic Divisions.—Data for geographic divisions, including the metropolitan area, or “Greater San Francisco,” are as follows:

Deaths from Main Classes of Diseases, for Geographic Divisions: August.

Geographic Division.	DEATHS: AUGUST.										
	All Causes.....	Epidemic Diseases ---	Tuberculosis (All Forms) -	Cancer -----	Diseases of Nervous System.....	Diseases of Circulatory System -----	Diseases of Respiratory System -	Diseases of Digestive System.....	Bright's Disease and Nephritis.....	Violence ----	All Other Causes.....
THE STATE ----	2,549	141	369	145	260	401	177	239	149	306	362
Northern California	346	34	44	15	38	54	14	24	14	58	51
Coast counties --	154	16	16	8	22	24	9	11	6	20	22
Interior counties	192	18	28	7	16	30	5	13	8	38	29
Central California	1,445	75	199	85	138	235	121	146	83	163	200
San Francisco --	501	20	71	40	34	105	47	42	33	42	67
Other bay counties -----	350	9	36	23	31	55	30	38	24	59	45
Coast counties --	173	9	22	8	22	29	11	11	14	25	22
Interior counties	421	37	70	14	51	46	33	55	12	37	66
Southern California	758	32	126	45	84	112	42	69	52	85	111
Los Angeles ----	521	25	89	34	57	80	25	49	34	52	76
Other counties--	237	7	37	11	27	32	17	20	18	33	35
Northern and Central California --	1,791	109	243	100	176	289	135	170	97	221	251
Metropolitan area -----	851	29	107	63	65	160	77	80	57	101	112
Rural counties -	940	80	136	37	111	129	58	90	40	120	139

REPORT OF PURE FOOD AND DRUG LABORATORY FOR AUGUST.

By PROFESSOR M. E. JAFFA, Director.

The following is a list of the persons accused, the foods found to be adulterated or mislabeled, and the nature of the offenses, which were included in the reports of the Director of the State Laboratory to this Board for the month of August. These persons were afforded an opportunity to be heard before this Board as provided in said act, and after such hearing, the findings of the Director being sustained, these cases were referred to the district attorneys of the several counties for prosecution:

Certifi- cate No.	Material.	Violation.	Name of Dealer.	Locality.
979	Ginger ale ----	Mislabeled. Saccharin---	Arrowhead Springs Water Company-----	Los Angeles
983	Ground oats --	Adulterated with wheat--	Henry Albers Co -----	Los Angeles
990	Banana syrup	Mislabeled. Coal-tar color -----	W. J. Board-----	Riverside
1001	Extract lemon	Mislabeled. Below stand- ard. Lemon oil-----	James & Hug-----	San Francisco
1002	Cider vinegar -	Mislabeled and adulter- ated. Below standard solids—ash, artificially colored -----	Star Specialty Co.-----	Los Angeles
1003	Essence pep- permint ----	Mislabeled. Below stand- ard, peppermint oil, coal-tar color -----	J. Lagomarsino-----	Oxnard
1004	Extract Win- tergreen ----	Mislabeled. Coal-tar color -----	L. A Andrae-----	Glendale
1010	Syrup Pano- cha Drips---	Adulterated. Glucose substitute -----	H. G. Chaffee-----	Pasadena
1011	Foley's Kid- ney Cure ---	Mislabeled. Ethyl alcohol not declared-----	E. Van Dyke -----	Los Angeles

The following U. S. Food inspection decisions have just been received at the laboratory:

FOOD INSPECTION DECISION NO. 123.

LABELING RICES.

Inquiries have been received as to what is the proper branding under the food and drugs act of certain varieties of rice which have come to be known under geographic names. It is well known among the trade that there are current in commerce in the United States varieties of rice grown in Japan and varieties of rice grown within the United States from seed originating in Japan, which are marked and sold as "Japan Rice" irrespective of origin, and that a variety of rice grown in Mexico is imported as "Honduras Rice." The names "Japan Rice" and "Honduras Rice," used without qualification, in the opinion of the Board, clearly convey the impression to consumers that the rices are grown in Japan and Honduras, respectively, and if applied to rices not there grown, constitute misbranding within the meaning of section 8 of the food and drugs act, which provides—

That the term "misbranded" as used herein shall apply * * * to any food or drug product which is falsely branded as to the State, Territory, or country in which it is manufactured or produced.

The labeling of rices which have come to be known under geographical names, and which are not grown in the State or country which the names indicate, is covered by Regulation 19, paragraph (c), reading as follows:

The use of a geographical name in connection with a food or drug product will not be deemed a misbranding when by reason of long usage it has come

to represent a generic term and is used to indicate a style, type, or brand; but in all such cases the State or Territory where any such article is manufactured or produced shall be stated upon the principal label.

To meet the requirements of this regulation rices grown within the United States, labeled "Japan Rice," should have also plainly stated on the label "Grown in the United States;" rices grown in Mexico or Louisiana, for example, labeled "Honduras Rice," should have also stated plainly on the label "Grown in Mexico," or "Grown in Louisiana," as the case may be.

There are also on the market varieties of rice labeled "Carolina White" and "Carolina Gold," which are grown in North and South Carolina, and also in many other States from Carolina seed. The Board is of the opinion that the names "Carolina White" and "Carolina Gold" by long usage have come to mean particular varieties of rice rather than rice grown in North or South Carolina, and such rices will not be held to be misbranded if plainly labeled "Carolina White" or "Carolina Gold," as the case may be, whether qualified or not, as growers or packers may see fit, by a statement of the name of the locality where the rice is actually grown. On the other hand, if it is desired to designate rices grown from Carolina seed in States other than North and South Carolina as "Carolina Rice," there should also be plainly stated on the label the name of the locality where the rice is actually grown, as, for example, "Carolina Rice, Grown in Arkansas."

FOOD INSPECTION DECISION NO. 124.

LABELING OF STOCK FEED.

It has been brought to the attention of the Board of Food and Drug Inspection that considerable uncertainty exists in the minds of manufacturers of stock feed as to what ingredients are included within the terms "nitrogen-free extract," "carbohydrates," and "sugar and starch." Confusion in this particular results in part from the varied interpretation given to the feeding stuff laws of different States. Each of the term has a definite significance. The term "nitrogen-free extract" includes starch, sucrose, reducing sugars, pentosans, organic acids, coloring matter, and certain other ingredients in small quantities, and the amount of nitrogen-free extract present in a stock feed is determined by subtracting the sum of the moisture, crude fiber, protein, fat, and ash content from 100 per cent. Stock feed will not be held to be misbranded on account of statements on labels of the "nitrogen-free extract" content if analysis shows that the amount obtained by this method is correctly declared.

The term "carbohydrates" includes most of the specified ingredients which make up the nitrogen-free extract, plus crude fiber, but does not include organic acids and coloring matter. The amount of ingredients included in nitrogen-free extract which are not carbohydrates is so small in stock feed that they may be disregarded in stating the amount of carbohydrates, and stock feeds will not be held to be misbranded on account of statements on labels of the proportion of carbohydrates if analysis shows that the percentage of carbohydrates declared equals the percentage of nitrogen-free extract obtained as indicated, plus the percentage of crude fiber.

Sugar and starch are carbohydrates and are included in determining the amount of carbohydrates present in stock feed. The term "starch and sugar," however, is properly applied only to the actual starch, sucrose, and reducing sugars contained therein, and stock feed will not be held to be misbranded on account of statements on labels of the percentage of starch and sugars, as such, if the percentage stated is the correct percentage of the amount of the starch, sucrose, and reducing sugars actually present.

This decision will go into effect January 1, 1911.

FOOD INSPECTION DECISION NO. 125.

THE LABELING OF CORDIALS.

The term "cordial" is usually applied to a product, the alcohol content of which is some type of a distilled spirit, commonly neutral spirits or brandy. To this is added sugar and some type of flavor. The flavor is sometimes derived directly by the addition of essential oils, again by use of synthetic flavors, and also by the treatment of some vegetable product with the alcoholic spirit to extract the flavoring ingredients. It is likewise the general custom to color cordials. When a cordial is colored in such a way as to simulate the color of the fruit, flavor, plant, etc., the name of which it bears, the legend "Artificially Colored" in appropriate size type shall appear immediately beneath the name of the cordial, as is required by Regulation 17. Where the color used is not one which simulates the color of a natural product, the name of which is borne by the liqueur, then the legend as to the presence of artificial color need not be used. For example, crème de menthe which is artificially colored green should be labeled "Artificially Colored." On the contrary, chartreuse, either green or yellow, need bear no such legend for color.

When the flavoring material is not derived in whole directly from a flower, fruit, plant, etc., the name of any such flower, fruit, plant, etc., should not be given to any cordial or liqueur unless the name is preceded by the word "Imitation."

The term cordial carries with it the significance of sugar (sucrose) as the sweetening agent. When anhydrous sugar (dextrose) is used, the label should bear a statement substantially as follows: "Prepared with anhydrous sugar," which statement should be made in a distinct fashion on the main label.

NOTICES OF JUDGMENTS.

The following notices of judgments have been received since the publication of the last Bulletin. Full copies of the different notices may be obtained upon application to the State Laboratory, Berkeley, Cal.:

Notice of Judgment No. 401.—Misbranding of a drug—"Hodnett's Gem Soothing Syrup." Label states, contains no morphine, whereas sample does contain morphine.

Notice of Judgment No. 402.—Misbranding of ice cream powder—"Cream-X-Cel-O." Label states, "Contains a high percentage of cream and butter fat," whereas it did not contain cream and butter fat.

Notice of Judgment No. 403.—Misbranding of maple syrup. Label states, "Vermont maple syrup," whereas it contained a large percentage of adulterants.

Notice of Judgment No. 404.—Misbranding of chicken feed—"Alfacorn." Label states, "12% protein, fat 3.5%, fiber 12%" whereas the two samples showed, respectively, 2.56 per cent fat, 18.57 per cent crude fiber and 2.92 per cent fat, 10.29 per cent protein, and 21.23 per cent crude fiber.

Notice of Judgment No. 405.—Adulteration and misbranding of banana extract. Label states, "Pure concentrated extract of Banana," when, as a matter of fact, it was a mere imitation of banana flavor.

Notice of Judgment No. 406.—Adulteration of mixed oats. Label states, No. 2 Mixed Oats," when, as a matter of fact, barley was substituted in part for oats and the product was a mixture of oats and barley and contained 12 per cent of barley.

Notice of Judgment No. 407.—Adulteration and misbranding of coffee. Label states, "Luzianne Coffee—The Reily-Taylor Co., New Orleans, U. S. A.," whereas the coffee was adulterated with chicory.

Notice of Judgment No. 408.—Adulteration and misbranding of orange extract. Label states, "pure concentrated extract of orange," while, as a matter of fact, it was diluted extract of orange, artificially colored.

Notice of Judgment No. 409.—Adulteration of oats. Purported to be "Oats," while, as a matter of fact, it was a mixture of oats and barley.

Notice of Judgment No. 410.—Misbranding of canned corn—"Ben Hur" Brand. Label states, "Two dozen 2-lb. Ben Hur Brand Sugar Corn, Packed by the Atlantic Canning Co., Atlantic, Iowa," when, in fact, the average weight per can was 24½ ounces.

Notice of Judgment No. 411.—Misbranding of lemon extract. Labeled, "Pure Extract of Lemon," whereas, in fact, it was not a pure extract of lemon, containing only 1.16 per cent of oil of lemon while standard lemon extract should contain 5 per cent oil of lemon in bulk.

Notice of Judgment No. 412.—Adulteration and misbranding of maple syrup. Labeled "Perfection Maple Syrup, Gordon Syrup and Pickle Company, Oakland, San Francisco," when, as a matter of fact, it was a mixture of cane sugar with a small percentage of maple sugar changed to the form of a syrup.

Notice of Judgment No. 413.—Misbranding of apricot brandy. Label states, "Apricot Brandy," when, as a matter of fact, it was not apricot brandy, but an artificial mixture containing no apricot whatever.

Notice of Judgment No. 414.—Misbranding of peach brandy. Label states, "Peach Brandy," when, as a matter of fact, it was an artificial mixture containing no peach whatever.

Notice of Judgment No. 415.—Misbranding of jelly (currant) and preserves (loganberry). Label states in large type "Currant Jelly" and in small type, "blended with apple and other fruit juices," whereas it is a mixture of currant, apple, and other fruit juices. Label states, "Loganberry Preserves, Selected California Fruit, Preserved in Pure Sugar, Long's Preserves, Long Syrup Refining Company, San Francisco, Calif.," whereas, in fact, it contained about 11 per cent glucose, a small amount benzoic acid, and colored with a prohibited coal-tar dye.

Notice of Judgment No. 416. Misbranding of lemon extract. Label states, "Popular Flavoring Extracts, Lemon (Artificial) Superior Quality, Bottled by Tillman & Bendel, San Francisco, Cal.; 16 ounces," whereas, in fact, it did not contain any oil of lemon or extract of lemon.

Notice of Judgment No. 417.—Adulteration of olive oil. Label states, "Fine Olive Oil, Diano Marina, Product of Italy, Registered Mark Galló; Quality and quantity guaranteed, B. P. G., Diano Marina," whereas it contained about 45 per cent cotton-seed oil.

Notice of Judgment No. 418.—Misbranding of a drug—"Falck's One-Minute Headache cure." Label states, "Falck's One-Minute Headache Cure," proportion of acetanilid not stated.

Notice of Judgment No. 422.—Misbranding of canned corn. Label states, "Two doz. Two Pounds, Sweet Corn, Audobon Canning Company, Audobon, Iowa," whereas, in fact, said cases contained 24 cans of sweet corn each, and each can contained 24 ounces of sweet corn and no more.

Notice of Judgment Nos. 419, 420, 423, 437.—Adulteration of milk. Milk was

adulterated in that water had been mixed to reduce and lower the quality and strength, and water had been substituted in part for milk.

Notice of Judgment No. 421.—Adulteration of milk. Cream had been abstracted therefrom.

Notice of Judgment No. 424.—Misbranding of "Tuckahoe Lithia Water." Label states, "Tuckahoe Lithia Water," and "This water is a sure solvent for calculi, either of the kidneys or liver, especially indicated in all diseases due to uric acid diathesis, such as gout, rheumatism, gravel stone, incipient diabetes, Bright's disease, inflamed bladder, eczema, stomach, nervous, and malarial disorders," whereas it was not a sure solvent for calculi of the kidneys or liver.

Notice of Judgment Nos. 425, 451, 430, 445, 446.—Adulteration of cream. Cream was adulterated in that butter fat had been left out and extracted wholly or in part.

Notice of Judgment No. 426.—Misbranding of a drug product—"Sporty Days Invigorator." Label states, "Sporty Days Invigorator." Misbranded on account of amount of alcohol not being stated.

Notice of Judgment No. 427.—Misbranding of a drug product—"Cancerine." Labeled, "Cancerine." ("This extract contains 2% alcohol,"—in very small type.)

Notice of Judgment No. 428. Misbranding of headache powders. Label states, "Knox's Head-ake Powders," and on reverse side—"A new remedy and the most certain cure for headaches, neuralgia, la grippe, and for the immediate relief of all pain. Very pleasant to take. Contains neither morphine, chloral, opium, cocaine, antipyrine—contains one half ounce acetanilid in each ounce," when, as a matter of fact, the powders contained practically two thirds of an ounce of acetanilid.

Notice of Judgment No. 429.—Misbranding of Holland rusk. Label states, "Original Holland Rusk made in Holland. Delicious, nourishing and healthful," when, as a matter of fact, it was made in the borough of Brooklyn, county of Kings, State of New York.

Notice of Judgment No. 431.—Misbranding of cheese. Label states, "Fromage de Brie Trade Mark Circle X Brand," when, as a matter of fact, it was manufactured within the State of Iowa.

Notice of Judgment No. 432.—Adulteration and misbranding of "Sucrene Dairy Feed." Label states, "100 pounds American Milling Company, Chicago, Ill. Sucrene Dairy Feed, Protein 16.50%, Fat 3.50%, Fibre 12%, made from cottonseed meal, wheat feed, corn, oats and molasses. Mfg. at Peoria, Ill," whereas product contained weed seeds and chaff mixed to reduce and affect quality and strength.

Notice of Judgment No. 433.—Misbranding of skin food—"Epp-O-Tone." Label states, "Epp-O-Tone, a skin food for beautifying the complexion," whereas product consisted of magnesium sulphate, colored with pink dye, and was not a skin food.

Notice of Judgment No. 434.—Misbranding of a drug—"Eau Sublime Hair Coloring." Label states, "Eau Sublime Hair Coloring. An instantaneous vegetable hair coloring. By one single application will color gray, faded and bleached hair any shade, from ash blonde to most beautiful black. Removes dandruff and prevents the hair from falling out. Harmless and durable. Directions inside. Sold by all druggists and hair dealers. Endorsed by U. S. Health Board, New York. This dye can not be washed off or bleached out. Mrs. H. Guilmar. None genuine without my signature," when, as a matter of fact, the statements would indicate that the product was a vegetable substance, whereas it was not a vegetable substance, and would not attain the above objects.

Notice of Judgment No. 435.—Misbranding of stock feed. 100 sacks labeled by tag reading: "100 lbs. Molasses Feed—Ingredients Molasses, Malt Sprouts and Cottonseed Meal Manufactured by E. P. Mueller, Norfolk, Va.," and 400 sacks were labeled by means of stencil, "100 lbs. Muellers, Molasses Grains. Analysis, Crude Protein 10%, Fat 3¼%, Carbohydrates 45%, Fiber 12%, Ingredients, Molasses, Cotton Seed Meal, Alfalfa, Wheat Bran, Cob Meal—E. P. Mueller, Norfolk, Va., For Drawback," when, as a matter of fact, no cottonseed meal, wheat bran, alfalfa meal was present.

Notice of Judgment No. 436.—Misbranding of canned pineapple. (Short weight.) Label states, "2 Doz. 2 lb. Pineapple, Hala Canning Company," when, in fact, the true weight was 1 pound 6 ounces, and further, was not plainly stated on outside cases.

Notice of Judgment No. 438.—Adulteration and misbranding of ice cream. Substitution of gelatin for cream.

Notice of Judgment No. 439.—Misbranding of flour. Label states, "California Queen Extra Patent Family Flour. Henry F. Allen, agent, San Francisco," and marked on end, in red letters, "California Queen," when, in fact, the flour was manufactured in Oregon.

Notice of Judgment No. 440.—Misbranding of canned corn. (Short weight.) Labeled, "2 Doz. 2-lb. Sweet Corn, Audobon Canning Co., Audobon, Iowa," whereas, in fact, the weight of corn in each can was only 1 pound 5¾ ounces.

Notice of Judgment No. 441.—Misbranding of olive oil. Label states, "G Brand: Finest Lucca Oil: Getz Bros. & Co., San Francisco, Cal.," whereas a large quantity of cottonseed oil had been substituted, and therefore was a mixture of cottonseed oil and olive oil.

Notice of Judgment No. 442.—Misbranding of canned blueberries. (Short weight.) Labeled, "2 doz. 2-lb. Cans Blueberries," "½ doz. Gallon Cans, Schoodock

Pond Packing Co. Blueberries," when, as a matter of fact, the package contained $\frac{1}{2}$ doz. cans weighing less than set forth in label.

Notice of Judgment No. 443.—Misbranding of flour. Labeled, "Mission Chimes, Highest Patent Family Flour, Special Blend, Selected Wheat, Hutton Milling Company, San Francisco, California," picture of mission building on label, marked "Santa Clara Mission," when, in fact, the flour was manufactured in the State of Oregon by the Wasco Warehouse Milling Company.

Notice of Judgment No. 444.—Adulteration and misbranding of lemon flavor. Label states, "Milton's Lemon Flavor Compound. A Terpeneless Lemon Flavor. Oil Lemon $\frac{1}{2}\%$, Alcohol 40%, water 59 $\frac{1}{2}\%$. Color Trace. For flavoring ice cream, candies, cake, etc. Our guarantee and serial No. 2129. Wm. Rippey, Cincinnati, Ohio," whereas a dilute solution of alcohol and water was substituted wholly or in greater part for terpeneless lemon flavor.

Notice of Judgment Nos. 447 and 448.—Adulteration of oysters. Consisted in whole or in part of a filthy, decomposed, and putrid animal substance.

Notice of Judgment No. 449.—Misbranding of drugs—"Eames' Tonic Headache Wafers." Label states, "Dr. Wm. M. Eames' Tonic Headache Wafers. (Formerly called Celery Crackers.)" Acetanilid not stated.

Notice of Judgment No. 450.—Misbranding of grape juice. (Short weight.) Label states, "12 Full Quarts Dark, Absolutely Pure Bass Islands Unfermented Grape Juice. The Bass Islands Vineyards Company, Sandusky, Ohio," (203 labeled as above); 53 labeled: same as above except words "24 Full Pints" in place of 12, both short weight.

Notice of Judgment No. 452. Adulteration and misbranding of oats. Labeled, "No. 3 White Oats," whereas it contained a mixture of white oats, barley, weed seeds, debris, wheat, chaff, etc.

Notice of Judgment No. 453.—Adulteration and misbranding of olive oil. Label states, "Prodotti di Olii—Olio Soprafino—Francescani Brand—Olive Oil and Salad Oil," when, in fact, it contains no olive oil whatever, and cottonseed oil is substituted and colored to conceal its inferiority.

Notice of Judgment No. 454.—Misbranding of a drug product—"Mrs. Graham's Dandruff Cure." Label states, "Mrs. Graham's Dandruff Cure," a permanent cure for dandruff, "pure and harmless," whereas it is not a permanent cure for dandruff and not pure and harmless.

Notice of Judgment No. 455.—Misbranding of canned tomatoes. (Short measure.) Label states, "The Climax Tomatoes. $\frac{1}{2}$ doz. gal. cans S. H. Levin's Sons, Leipsic, Del.," when, in fact, each can contained only 8-10 gallons.

Notice of Judgment No. 456.—Misbranding of canned pineapple. (Short weight.) 34 packages labeled: "B. S. 58 $1\frac{1}{2}$ lbs. Cubes" and on outside of package, "Singapore Chop Tan Hin Brand Pineapple Cubes. The Paul-Taylor-Brown Co. Importers, New York;" 32 of said packages were labeled: "B. S. $1\frac{1}{2}$ lbs. Chunk," and on outside of package, "Singapore Chop Tan Hin Pineapple Chunk. The Paul-Taylor-Brown Co., Importers, New York, "24 packages labeled, "Chop Tan Hin Sliced Pineapple. The Taylor-Brown Co., New York" and on outside of package, "S. W. H. 58 $1\frac{3}{4}$ lbs. sliced smooth," short weight.

Notice of Judgment No. 457.—Adulteration and misbranding of evaporated apples. Label states, "Dime Brand Choice Evaporated Apples. Packed by Wallerstein Produce Co., Richmond, Va.," whereas, it consisted of a filthy, decomposed vegetable substance, to wit, moldy and rotten portions of apples, worms, etc.

Notice of Judgment No. 458.—Table syrup, misbranding of. Label states, that product contains 80 per cent corn syrup, 20 per cent granulated sugar syrup, whereas the product contained more corn syrup and less granulated sugar syrup than was stated.

Notice of Judgment No. 459.—Laudanum, adulteration and misbranding of. Label states, "Alcohol 45 per cent, opium 45.6 per cent gr. per oz. U. S. P.," whereas the product differed from the standard of strength, quality, and purity as determined by test laid down in the U. S. Pharmacopœia for laudanum.

Notice of Judgment No. 460.—Milk, adulteration of. Sample analyzed, valuable constituent of food, to wit, butter fat, left out wholly or in part.

Notice of Judgment No. 461.—Vermouth, misbranding of. Label states, "Vermouth Excelsior M. van Doorninck Mahler & Cie Bordeaux, M. B. & Cie," whereas, in fact, label failed to bear statement of quantity or proportion of alcohol contained therein.

Notice of Judgment No. 462.—Eggs—Frozen, adulteration of. Product consisted in whole or in part of a filthy, decomposed, and putrid animal substance.

Notice of Judgment No. 463.—Stock feed "Shorts," misbranding of. Label states, "Shorts, 80 lbs., Guar. Analysis: Protein 16.50 per cent minimum, Fat 6.00 per cent minimum, Fibre 6.00 per cent maximum," whereas, in fact, less protein and less fat were present in said product as shown by analysis.

Notice of Judgment No. 464.—Mixed feed, misbranding of. Label states, Protein 13.00 per cent; Fat 4.00 per cent; Fibre 8.00 per cent—80 lbs., whereas, in fact, said product contained but 8.71 per cent protein and no fat at all.

Notice of Judgment No. 465.—"Ramon's Pepsin Headache Cure," misbranding of. Label states, "Ramon's Pepsin Headache Cure," whereas pepsin was not present therein in any perceptible quantity.

Notice of Judgment No. 466.—"Rococola," adulteration and misbranding of (soft drink containing caffeine and cocaine). Added deleterious ingredients, to wit, caffeine and cocaine.

Notice of Judgment No. 467.—"Rock Candy Drips and Whisky," misbranding of. Label states, "Rock Candy Drips and Whisky." Product contained 27.2 per cent by volume of alcohol which was not stated on the label.

Notice of Judgment No. 468.—"Boss Chop Feed," misbranding and adulteration of. Label states, "Boss Chop Feed." Label represents product to be made from corn feed, oats, oat middlings and oat feed, whereas, in fact, the product was not made from these ingredients but contained upwards of 10 per cent oat hulls in excess of proportion of oat hulls which would normally be present.

Notice of Judgment No. 469.—Syrup—Table, misbranding of. Label states, "Dickinson's Maple and Cane Syrup." Purchaser lead to believe the chief ingredient of said product was maple syrup, whereas, in fact, the product contained less than 50 per cent maple syrup.

Notice of Judgment No. 470.—"Manana Gluten Breakfast Food," misbranding of. Label states, "It has accomplished a great work with the sick," such statement being false and misleading.

Notice of Judgment No. 471.—Corn—Canned, adulteration and misbranding of. Label states, "Spring Garden Brand Sugar Corn, packed by Spring Garden Canning Factory, Spring Garden, Iowa." Product consisted in part of filthy, decomposed, and putrid animal substance; also product was not packed by Spring Garden Canning Factory.

Notice of Judgment No. 472.—Olive Oil, misbranding of. Label states, "Specialta Olio di Prima Qualita," whereas the product is not an oil of first quality.

Notice of Judgment No. 473.—Salad Oil, misbranding of. Label states, "Olio per Insalata Sopraffino Vival Brand Cotton Salad Oil, Extra Qualita," the English meaning of which is "salad oil, superfine, extra quality," whereas, in fact, said oil was not olive oil and was not manufactured in Italy.

Notice of Judgment No. 474.—Tomato Catsup, misbranding of. Label states, "Nantucket Brand Tomato Catsup." Product contained 9.56 per cent of glucose which was not set forth on label.

Notice of Judgment No. 475.—Oysters, adulteration of. Oysters were contaminated and contained enormous numbers of bacteria, deleterious to health.

Notice of Judgment No. 476.—Jam, misbranding of. Label represented product to contain 30 per cent granulated sugar, 8 per cent corn syrup, when, as a matter of fact, it contained 59.14 per cent corn syrup (glucose) and only 2.17 per cent sugar, etc.

Notice of Judgment No. 477.—Stock Feed—Stafolife, adulteration and misbranding of. Labeled "Stafolife." Label represents product to be rice bran, corn, cotton-seed meal and molasses, whereas it contained in addition, rice hulls and alfalfa.

Notice of Judgment No. 478.—Vanilla Extract, adulteration and misbranding of. Label states, "Golden Rod Brand Flavoring Extract Vanilla." Product consisted of a solution of vanillin and coumarin, colored to conceal inferiority of said article.

Notice of Judgment No. 479.—Cream, adulteration of. Butter fat had been partly or wholly abstracted therefrom.

Notice of Judgment No. 480.—Lemon Extract, adulteration and misbranding of. Label states, "Earll's Terpeneless Lemon Flavoring, Vegetable Coloring." A liquid substance purporting to be terpeneless lemon flavoring with vegetable coloring had been mixed and packed with other substances to reduce and lower the quality.

Notice of Judgment No. 481.—Flour—Buckwheat, adulteration and misbranding of. Label represents product to be buckwheat flour, whereas, in fact, it was a mixture of buckwheat, rye, and wheat flours.

Notice of Judgment No. 482.—Eggs, adulteration of. Consisted in part of filthy, decomposed and putrid animal substance and were unfit for food.

Notice of Judgment No. 483.—Bitters, misbranding of. Label would lead one to believe that the bottle of bitters is a foreign product, imported from Italy, when, as a matter of fact, said bottles of bitters had not been made in Italy, but in Chicago, Illinois.

Notice of Judgment No. 484.—Cream, adulteration of. A valuable constituent of the article, to wit, butter fat, had been abstracted and left out.

Notice of Judgment No. 485.—Cream, adulteration of. A valuable constituent, butter fat, abstracted.

Notice of Judgment Nos. 486, 492, 494.—Frozen Eggs, adulteration of. Product consisted of filthy, decomposed, and putrid animal and vegetable substance.

Notice of Judgment No. 487.—Macaroni, misbranding of. Label would lead purchaser to believe that product was a foreign product, whereas, in fact, it was manufactured in the United States.

Notice of Judgment No. 488.—Blueberries, canned, misbranding of. Label represents can to contain 2 pounds, when, as a matter of fact, the contents of each can weighed about 1 pound and 8 ounces.

Notice of Judgment No. 489.—Olive oil, adulteration of. Offered for sale under name of pure olive oil, whereas, in fact, cotton-seed oil had been mixed with the olive oil.

REPORT OF HYGIENIC LABORATORY FOR AUGUST.

W. A. SAWYER, M.D., Director.

Summary of Daily Reports for the Month of August, 1910.

	Positive.	Negative.	Total.
Diphtheria	23	53	76
Malaria	2	5	7
Tuberculosis	8	7	15
Typhoid	4	23	27
Water	0	2	2
Rabies	3	2	5
Miscellaneous	2	0	2
Totals	42	92	134

Detailed Report of the State Hygienic Laboratory.

This table is included as indicating suspected foci of communicable diseases. A number of these localities will not be found among those reported in the tables in the Bureau of Epidemiology report. This means that the omitted cases were finally proved not to be communicable diseases. It is in just such cases that the laboratory can be useful to the attending physician, and the latter may do a great service for the health of his community, by promptly considering a case as dangerous to the public until he can prove it to be otherwise. The awakening public interest in health administration will support physicians in this policy, and the State Board of Health, through local health officers, and its branch laboratory service, will do everything possible to prevent undue hardships or delays in carrying it out.

Locality.	Diph- theria...	Typhoid..	Tuber- culosis--	Water ----	Malaria --	Rabies ---	Miscel- laneous.-	Total
Alhambra								1
Dr. Bishop	0	0	0	0	0	1	0	29
Berkeley								
Dr. Ellis	0	1	0	0	0	0	0	
Dr. Gillihan	0	2	0	0	0	0	0	
Dr. Hector	1	0	0	0	0	0	0	
Dr. Kelsey	0	1	0	0	0	0	0	
Dr. Maxwell	0	0	0	0	0	0	0	
Dr. McCleave	0	0	3	0	0	0	0	
Dr. Page	2	2	0	0	0	0	0	
Dr. Reinhardt	0	1	0	0	0	0	0	
Dr. Sawyer	1	1	1	0	0	0	1	
Dr. Shafer	0	1	0	0	0	0	0	
Dr. Simpson	0	7	0	0	0	0	0	
Dr. Stitt	0	0	1	0	0	0	0	
Dr. Williams	0	1	0	0	0	0	0	
Dr. Woolsey	1	0	0	0	0	0	0	
Dr. Bancroft	0	0	1	0	0	0	0	
Concoran								1
Dr. Perry	1	0	0	0	0	0	0	
Concord								2
Dr. McKenzie	1	1	0	0	0	0	0	
Corona								1
Dr. Page	0	0	0	0	0	1	0	
Colton								4
Dr. Champion	4	0	0	0	0	0	0	
Dunsmuir								2
Dr. Cornish	2	0	0	0	0	0	0	
Elk Grove								9
Dr. Wildanger	9	0	0	0	0	0	0	

Suspected Foci of Communicable Diseases—Continued.

Locality.	Diph- theria...	Typhoid...	Tuber- culosis...	Water	Malaria	Rabies	Miscel- laneous	Total
Folsom								1
Dr. Hesser	0	0	0	0	1	0	0	
Fresno								24
Dr. Lang	13	0	0	0	0	0	0	
Dr. Aitken	1	0	0	0	0	0	0	
Dr. Long	4	2	0	0	2	0	0	
Dr. Manson	0	0	1	0	0	0	0	
Dr. Bonyng	0	0	0	1	0	0	0	
Hayward								6
Dr. Calbraith	2	0	0	0	0	0	0	
Dr. Neilson	1	2	1	0	0	0	0	
Half Moon Bay								1
Dr. Brooke	0	0	0	1	0	0	0	
Livermore								1
Dr. McGill	0	0	1	0	0	0	0	
Long Beach								1
Dr. Harvey	0	0	1	0	0	0	0	
Los Banos								1
Dr. McClelland	0	0	0	1	0	0	0	
Napa								6
Dr. Hennessy	6	0	0	0	0	0	0	
Ojai								1
Dr. Vischer	0	0	0	0	1	0	0	
Ontario								2
Dr. Sheppard	0	0	1	0	0	0	0	
Dr. Orr	0	0	1	0	0	0	0	
Petaluma								1
Dr. McMullen	1	0	0	0	0	0	0	
Point Richmond								2
Dr. Lucas	1	1	0	0	0	0	0	
Porterville								4
Dr. Barber	1	1	0	0	0	0	0	
Dr. Miller	1	1	0	0	0	0	0	
Santa Barbara								2
Dr. Stoddard	0	0	0	0	2	0	0	
Salinas								1
Dr. Parker	1	0	0	0	0	0	0	
San Bernardino								2
Dr. Ham	0	0	0	0	0	2	0	
San Francisco								2
Dr. Lafontaine	0	0	2	0	0	0	0	
San Jose								4
Dr. Jeyet	2	0	0	0	0	0	0	
Dr. Simpson	2	0	0	0	0	0	0	
San Luis Obispo								1
Dr. Wade	0	0	1	0	0	0	0	
Stockton								1
Dr. Walker	0	0	0	0	0	0	1	
Temecula								1
Dr. McCormick	0	0	0	0	0	1	0	
Truckee								1
Dr. Cartwright	0	1	0	0	0	0	0	
Ripon								2
Dr. Chiapella	0	1	0	0	1	0	0	
Ukiah								1
Dr. Litchfield	1	0	0	0	0	0	0	
Vallejo								17
Dr. Bond	11	0	0	0	0	0	0	
Dr. Dempsey	4	0	0	0	0	0	0	
Dr. Downing	1	0	0	0	0	0	0	
Dr. Reilly	1	0	0	0	0	0	0	
Total								134

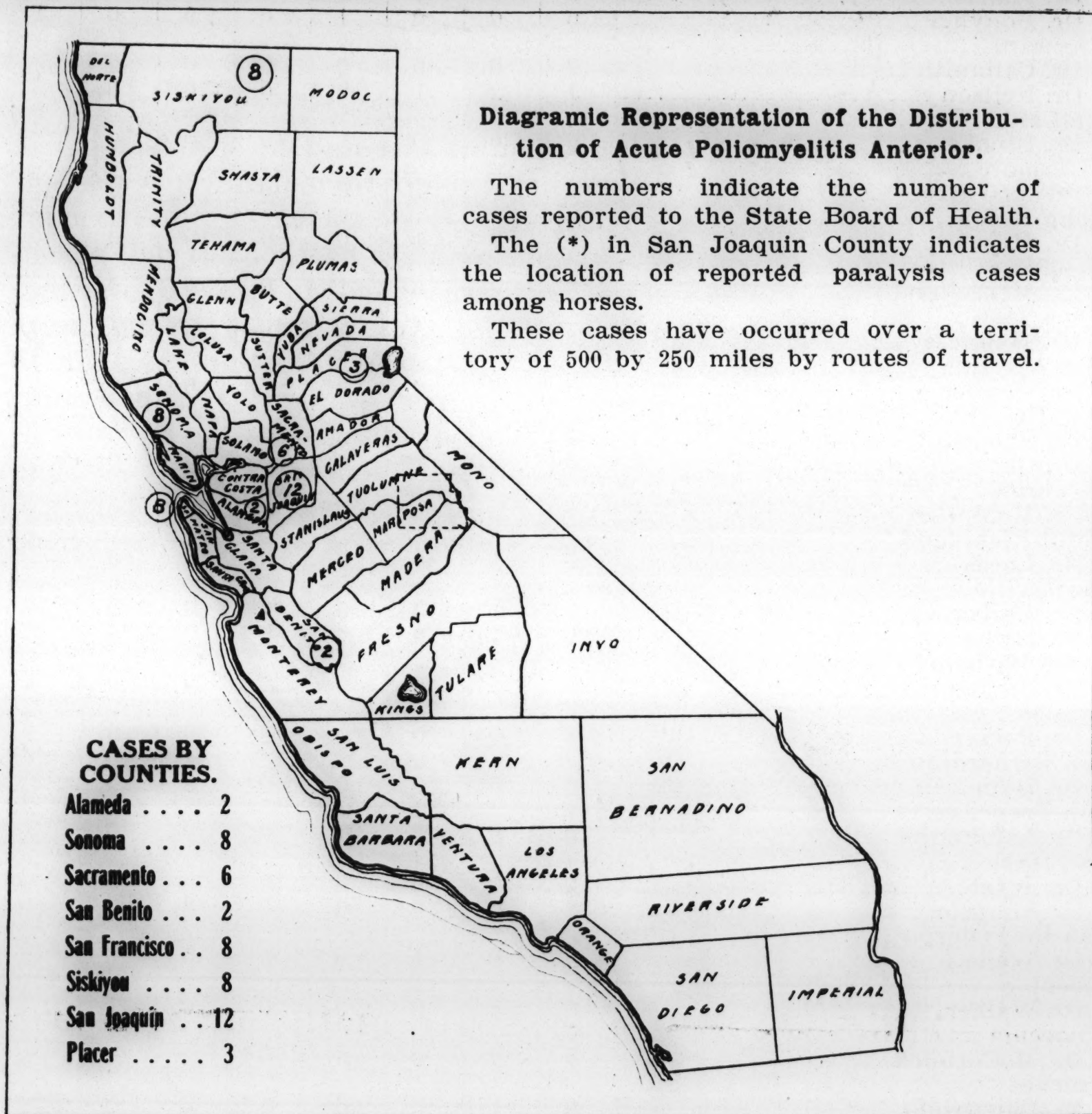
Monthly Report of the Los Angeles Branch.

Diphtheria, 4. Positive. Dr. Champion, Colton.
Malaria, 3. Pos. 2. Dr. Stoddard, Santa Barbara.
Neg. 1. Dr. Vischer, Ojai.

REPORT OF BUREAU OF EPIDEMIOLOGY.

WILLIAM F. SNOW, M.D., Director.

According to the reports for the month of August, 392 citizens were drafted for battle against our communicable disease enemies. Over 26 per cent, or 104 of these, have already died; many of the others will not be sufficiently convalescent to return to their ordinary duties of civic life for many months or even years. The attacks of the solid four—typhoid, whooping-cough, diphtheria, and measles—have been specially dis-



astrous, causing 103 out of the 104 fatalities. The 104th death was caused by a new and strange ally of the enemy known as anterior poliomyelitis.

ACUTE ANTERIOR POLIOMYELITIS.

As announced in previous issues of the Bulletin, the State Board of Health has been investigating a disease which has recently become prevalent in California. This disease is technically known as acute poliomyelitis anterior, but is often called infantile spinal paralysis. During the past three years it has appeared with increasing prevalence in some sixteen states scattered from the Atlantic coast to the Pacific.

The recent investigations of the Rockefeller Institute for Medical Research have proved the disease to be caused by a filterable virus, and it has been successfully transferred through a series of monkeys; but little else is known of its etiology or of the epidemiological factors to be looked for. The following preliminary announcement has been prepared by Dr. F. F. Gundrum, who has been detailed by the Board to officially study the cases of the disease which may appear in this State. Dr. Milton B. Lennon, who is chairman of a special committee appointed by the San Francisco County Medical Society to study the disease, is preparing a special article which will appear in the October issue of the Bulletin. Resident physicians in each of the foci reported below are carrying on individual observations of cases in their respective communities. The State Board of Health desires every physician to report promptly every case of verified or suspected poliomyelitis. Forty-nine cases of this disease have been officially reported to the Board, but verbal reports show approximately twelve more for San Francisco, one for Marin County, and one for Calaveras County.

REPORT OF STATE MEDICAL INSPECTOR GUNDRUM.

There have been forty-nine cases of acute anterior poliomyelitis reported to the State Board of Health during the past twelve months. Since February there have been reported thirty-three cases from eight counties: Alameda, San Francisco, San Joaquin, Sacramento, San Benito, Sonoma, Placer, and Siskiyou. The accompanying map of the State shows the locality and number of cases so far reported to the Board. The report and in consequence the map too are not yet complete, nor has it been possible to study all the cases reported from an epidemiological standpoint. This short preliminary report may, however, call attention to the importance of getting exhaustive and accurate returns from localities where the disease obtains. The cases occurring in Sacramento and San Joaquin counties during the past summer have nearly all been seen and etiological factors sought for.

There were certain notable differences in clinical type between the symptoms of the Sacramento County and San Joaquin County cases. In the former, seen through the kindness of Dr. F. J. Wildanger, the so-called meningeal type of onset predominated. The patients complained of severe headaches, backache, and marked rigidity of the neck as a very constant symptom. There was fever (101 to 103 deg. F.) for from three days to a week. No very noticeable gastro-intestinal disturbances occurred. On account of the present uncertainty as to the incubation period of anterior poliomyelitis the question of infection of one child by another is a very difficult one. In one remarkable group of cases near Sheldon five children out of eight, all cousins and living on adjoining farms, were attacked within three days. The eldest boy had been the only child away from home, his return being seven days before his sickness began. The late onset of symptoms, in his case, contrasted with the prompt illness of four associate children cast some doubt, perhaps, upon transmission in the ordinary sense from him to the other children, unless, indeed, he infected the other children before developing symptoms himself.

The Stockton cases, which seem to have been unusually severe (two deaths and many widely disseminated paralyses occurring), were seen through the kindness of Doctors R. B. Knight and E. A. Arthur. The clinical type here differed much from that above. In nearly all cases gastro-intestinal disturbances were marked and frequently the predominating feature of the disease, until pains in the limbs and paralysis made the true nature of the ailment manifest. These children had abdominal discomfort, malaise, constipation (or occasional diarrhoea) and fever. Headache and retraction of the neck were uncommon. They belonged to the so-called classical type in which paralysis is usually the first definite diagnostic feature of the attack.

It has been most difficult to trace any contact between previous and subsequent cases in Stockton and no undoubted secondary cases have occurred, in spite of the fact that quarantine has not been established against this malady and many children were freely exposed to the disease. In nine undoubted cases there were twenty-five children and twenty-one adults in close contact with the patients during the acute attack without the occurrence of a single positive secondary case.

The sanitation has been in some cases excellent, city water supply and sewers, and in others deplorable open privy vaults and two shallow wells. Animals affected with any similar diseases have in no case been discoverable in any close relation to the patients, but veterinarians report a considerable number of puzzling paralyses of

colts in San Joaquin County where the largest number of human cases have occurred thus far. The social conditions too have had no constant relation to the disease.

Dust and flies have been present in abundance in practically all localities when the malady has occurred, but their causal relation to the disease has, of course, not yet appeared.

A short blank has been made out largely for the convenience of the statistician in summing up the cases.

CALIFORNIA STATE BOARD OF HEALTH.

REPORT ON ANTERIOR POLIOMYELITIS.

1. Patient's name_____ Age_____ Sex_____ Race_____
2. Residence (City or Township) _____ County_____
3. Family History.
 - (A) Nationality of Parents: Father_____ Mother_____
 - (B) Other children of family_____ Ages_____ Sex_____
 - (C) Other individuals of household_____ Ages_____ Sex_____
 - (D) Social Conditions _____
 - (E) General health of household_____
4. Personal history of patient:
 - (A) General health _____
 - (B) Previous diseases _____
5. Present illness:
 - (A) Prodromes _____
 - (B) Onset. (Symptoms):
 1. Head and nervous _____
 2. Cardio-respiratory _____
 3. Gastro-intestinal _____
 4. Pain and tenderness _____
 - (C) Course. (Physical findings.):
 1. Date seen by Physician_____
 2. Condition observed _____
 - (D) Paralyzes. (location and extent)_____
 - (E) Outcome _____
6. Epidemiology:
 - (A) Weather _____
 - (B) Water supply _____
 - (C) Sewer connections _____
 - (D) Stables _____
 - (E) Domestic animals:
 1. Number and kind _____
 2. Health of _____
 - (F) Flies _____
 - (G) Food supply. (Vegetables) _____
 - (H) Poliomyelitis in neighborhood:
 1. Previous to this case_____
 2. Subsequent to this case_____
7. Attending Physician _____ Address_____
8. Reporting Physician _____ Address_____
9. Date_____

The State Board of Health has not yet issued any instructions to local officers concerning this disease, because the epidemiological factors are too little understood. However, the present rapid spread of the disease and recent scientific work shows that it should be reportable. A quarantine of three weeks would be justifiable as a precaution until more definite information can be secured.

BUBONIC PLAGUE.

THREE LETTERS AND A REPORT—WHAT THE NATIONS WILL DO.

From the letter files State Board of Health.

September 6, 1910.—"About a week ago, a case of suspected bubonic plague was reported to me and by me reported to the U. S. P. H. Service for examination. Dr. McCoy was detailed to investigate the case and the result of his examination was reported to me by Dr. Blue as confirming the diagnosis. The patient is recovering, and every possible precaution is being taken, but there is the possibility of other cases occurring and I would like explicit directions."

Yours sincerely,

WM. SIMPSON,
County Health Officer, Santa Clara County.

September 7, 1910.—“I beg to advise you of the occurrence of a case of bubonic plague at Coyote, Santa Clara County, California, August 23, 1910. The patient, _____, aged 18 years, native of California, is under professional care_____ and will recover. Infection has been found on a number of ranches in this section, namely, _____.”

Respectfully,

RUPERT BLUE,
Surgeon, Commanding.

September 19, 1910.—"I think there must be some kind of a plague or epidemic among the ground squirrels on my cattle ranch in the Mount Hamilton range. They are disappearing very fast—there is not one now where there were fifty some time ago. Should you deem it worthy of investigation I shall be glad to afford you every facility."

Yours truly,

From United States Public Health Reports—September 9, 1910.

PLAGUE PREVENTION WORK.

Surgeon Blue reports:

Case of plague in Santa Clara County, California, September 5th. Bacteriological examination has confirmed the clinical diagnosis of plague in a girl aged 18 years, a native of California. The patient is now isolated in a hospital at San Jose. The infection was probably acquired at Coyote, Santa Clara County.

The Public Health Reports go to the government officials of every nation having relations with the United States. These officials have California listed as one of the present endemic plague centers of the world. This report will cause these nations to move forward their dates for human plague in California to August, 1910, and to place the firing-line of our battle against the disease at 50 miles from San Francisco. Then what will happen? *Only* sympathy, encouragement, coöperation, unimpeded commerce, so long as the local consuls of these nations report such intelligent, effective prompt coöperation among federal, state, and county officials, and citizens as these letters indicate.

Reports of the presence of communicable diseases have been received during the month of August from the following localities in the State:

This list is incomplete and should be interpreted as evidence of communities that are actively obeying the laws which relate to reporting communicable diseases, and are making efforts to discover and control such diseases, rather than as evidence of communities having a large amount of preventable illness.

It should be noted that those communities represented by column II, which have not reported at least as many cases of each disease in column I have failed to comply with the law.

Column 1, Morbidity Statistics for August. Column 2, Mortality Statistics for August.

[illegible]

Column 1, Morbidity Statistics. Column 2, Mortality Statistics—Continued.

COUNTY.	Anterior Poliomyelitis.		Typhoid.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Small-pox.	
	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.
Contra Costa—														
Richmond	0	0	1	0	0	0	0	0	0	1	0	0	0	0
Rural	0	0	2	0	0	0	0	0	1	0	0	0	0	0
Del Norte	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Dorado	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fresno—														
Coalinga	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Fresno	0	0	12	4	1	0	2	0	0	1	8	2	0	0
Selma	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Rural	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Glenn—														
Rural	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Humboldt—														
Eureka.....	0	0	1	1	0	0	1	0	0	0	0	0	2	0
Rural	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Imperial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kern—														
Rural	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Kings—														
Lemoore	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Rural	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Lake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lassen—														
Rural	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Los Angeles—														
Los Angeles.....	0	0	0	5	0	0	0	0	0	3	0	1	0	0
Corona	0	0	6	0	0	0	2	0	0	0	0	0	0	0
Long Beach.....	0	0	0	1	0	0	1	0	0	0	0	0	0	0
Santa Monica....	0	0	0	1	0	0	3	0	0	1	0	0	0	0
Whittier	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pasadena	0	0	0	0	0	0	3	0	0	0	1	0	0	0
Pomona	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Rural	0	0	0	3	0	0	1	0	0	0	0	1	0	0
Madera	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marin—														
Rural	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Mariposa—														
Mariposa.....	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Mendocino—														
Ukiah	0	0	0	1	0	0	0	0	0	0	1	0	0	0
Rural	0	0	0	0	0	0	3	0	0	0	10	1	0	0
Ft. Bragg	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Merced—														
Rural	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Modoc.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mono	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monterey—														
Rural	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Napa—														
Napa City.....	0	0	0	1	0	0	0	0	0	1	3	0	0	0
Nevada—														
Rural	0	0	1	0	0	0	0	0	0	0	0	1	0	0
Orange—														
Santa Ana	0	0	6	3	0	0	1	0	0	0	0	0	0	0
Orange.....	0	0	0	0	0	0	2	0	0	0	1	0	0	0
Rural	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Placer—														
Roseville	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Plumas—														
Quincy.....	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Portola.....	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Riverside—														
Riverside	0	0	7	0	0	0	0	0	0	0	0	0	0	0
Rural	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Sacramento—														
Sacramento	0	0	0	0	0	0	2	0	0	0	1	0	1	0
Rural	0	0	0	0	0	0	1	0	7	0	1	1	0	0
San Benito—														
Hollister.....	2	0	0	0	0	0	2	0	0	0	1	0	0	0
Rural	0	0	0	0	0	0	0	0	0	0	0	1	0	0
San Bernardino—														
San Bernardino...	0	0	5	1	3	0	0	0	2	0	0	0	0	0
Ontario	0	0	10	0	0	0	0	0	0	0	0	0	0	0

Column 1, Morbidity Statistics. Column 2, Mortality Statistics—Continued.

COUNTY.	Anterior Poliomyelitis.		Typhoid.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Small-pox.	
	Cases Reported...	Deaths....	Cases Reported...	Deaths....	Cases Reported...	Deaths....	Cases Reported...	Deaths....	Cases Reported...	Deaths....	Cases Reported...	Deaths....	Cases Reported...	Deaths....
San Diego—														
San Diego.....	0	0	0	0	0	0	8	0	0	0	1	0	0	0
San Francisco	4	1	42	9	34	2	27	0	0	4	32	2	1	0
San Joaquin—														
Lodi.....	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Stockton	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Rural	0	0	0	2	0	0	0	0	0	0	0	0	0	0
San Luis Obispo—														
Rural	0	0	0	1	0	0	0	0	0	0	0	0	0	0
San Mateo.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Barbara—														
Santa Barbara	0	0	1	0	7	0	3	0	0	0	1	0	0	0
Santa Clara—														
San Jose	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Rural	0	0	0	0	0	0	2	0	0	2	3	0	0	0
Santa Cruz—														
Santa Cruz.....	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Boulder Creek	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Watsonville	0	0	0	0	0	0	0	0	0	0	8	0	0	0
Shasta—														
Redding	0	0	1	0	0	0	0	0	0	1	0	0	0	0
Rural	0	0	0	0	0	1	1	0	0	0	0	1	0	0
Sierra	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Siskiyou—														
Doris	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Rural	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Solano—														
Vallejo	0	0	0	0	0	0	0	0	0	1	0	2	0	0
Sonoma—														
Rural	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Stanislaus—														
Turlock	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Rural	0	0	0	1	0	0	0	0	0	1	0	0	0	0
Sutter	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tehama.....	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Trinity	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tulare—														
Visalia	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Rural	0	0	0	1	0	0	0	0	0	2	0	0	0	0
Tuolumne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ventura.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yolo.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yuba	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	6	1	134	51	46	4	79	0	31	30	88	18	8	0

BUREAU OF PUBLIC HEALTH INFORMATION.

RAYMOND RUSS, M.D., Director.

During the past month representatives from this Bureau have spoken before the Teachers' Institute at Yreka, September 6, 7, and 8, and before the Farmers' Institute of Southern California. Meetings of this Institute being held as follows:

Nordoff, August 19th.

Carpinteria, August 22d.

Goleta, August 23d.

Mound School, August 24th.

Fillmore, August 26th.

During the session of the Second National Industrial Food Exposition

at San Jose, September 17th to 30th, inclusive, stereopticon lectures on public health subjects have been provided for each evening as follows:

September 17, 1910, Prof. R. R. Long, Stanford University, "Prevention of Tuberculosis."

September 19, 1910, Dr. Wm. Simpson, San Jose, "Public Health Problems."

September 20, 1910, Dr. Rupert Blue, U. S. P. H. and M. H. S., and Dr. McLaughlin, ex-Commissioner of Health of the Philippine Islands, "The Menace of Ground Squirrels to California."

September 21, 1910, Dr. Raymond Russ, San Francisco, "What the Citizen Can Do for Public Health."

September 22, 1910, Dr. G. M. Converse, U. S. P. H. and M. H. S., "Bubonic Plague."

September 23, 1910, Prof. R. R. Long, Stanford University, "Dairy Conditions in California."

September 24, 1910, Prof. R. R. Long, Stanford University, "Sewage Disposal and Water Supply."

September 26, 1910, Dr. Wm. Simpson, San Jose, "Public Health Problems."

September 27, 1910, Dr. Wm. Simpson, San Jose, "Public Health Problems."

September 28, 1910, Dr. Wm. Simpson, San Jose, "Public Health Problems."

September 29, 1910, Dr. G. M. Converse, U. S. P. H. and M. H. S., "Plague Eradicative Work in California."

September 30, 1910, Prof. R. R. Long, Stanford University, "Sanitation and What It Can Accomplish."

The Bureau gratefully acknowledges the most valuable assistance furnished by Prof. R. R. Long, Department of Hygiene, Stanford University, Miss Ora Boring, Dr. Wm. Simpson, Dr. Rupert Blue, U. S. P. H. and M. H. S., Dr. A. J. McLaughlin, and Dr. Converse, U. S. P. H. and M. H. S.

The Bureau is preparing to furnish lectures on hygienic subjects before Teachers' Institutes at

San Luis Obispo, October 4, 5, 6.

Salinas, first or third week in October.

Placerville, October 4, 5, 6.

Ventura, December 19th to 21st, inclusive.

Willows, last week in October.

Redwood City, October 3d.

San Rafael.

Nevada City.

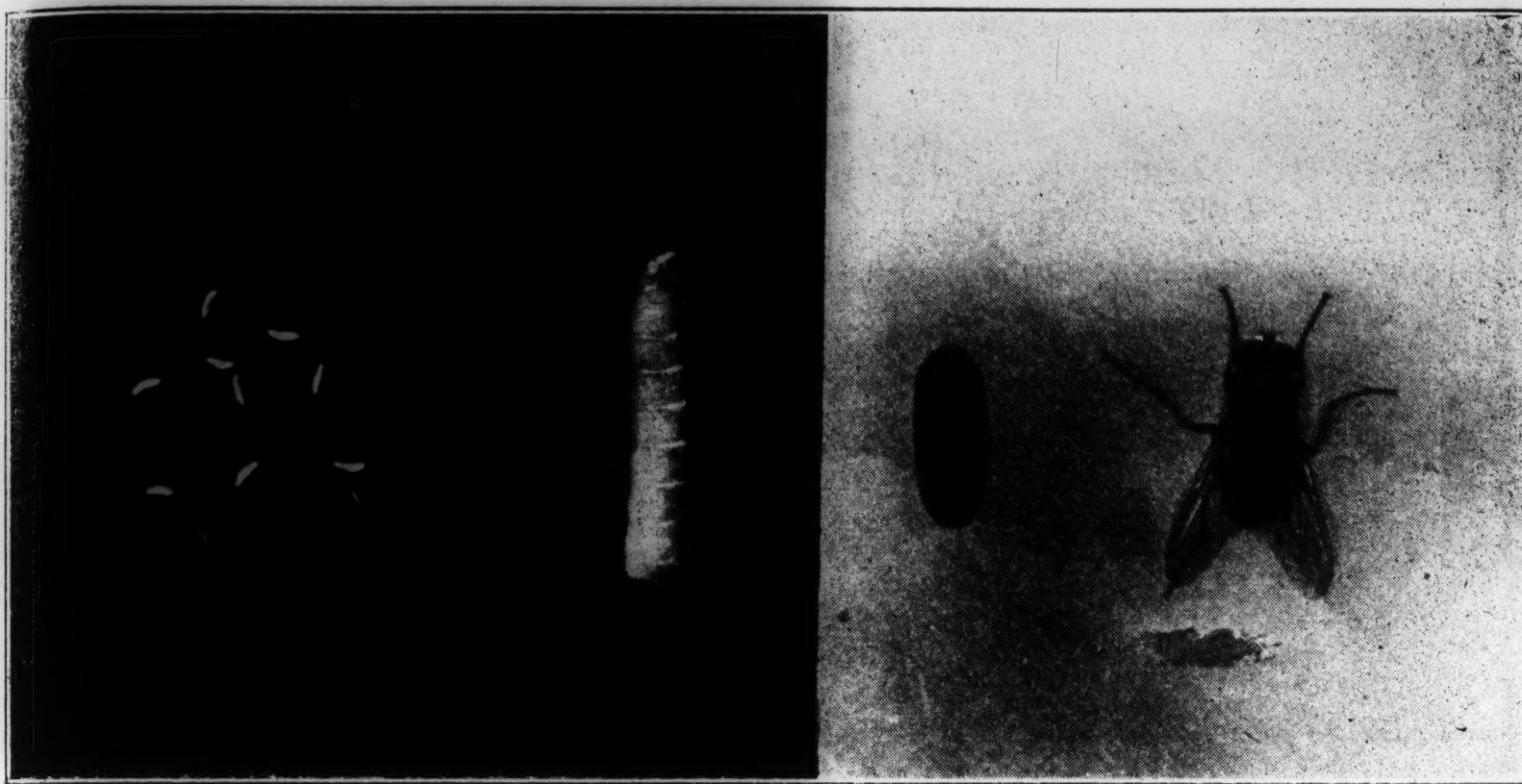
Mendocino.

Long Beach.

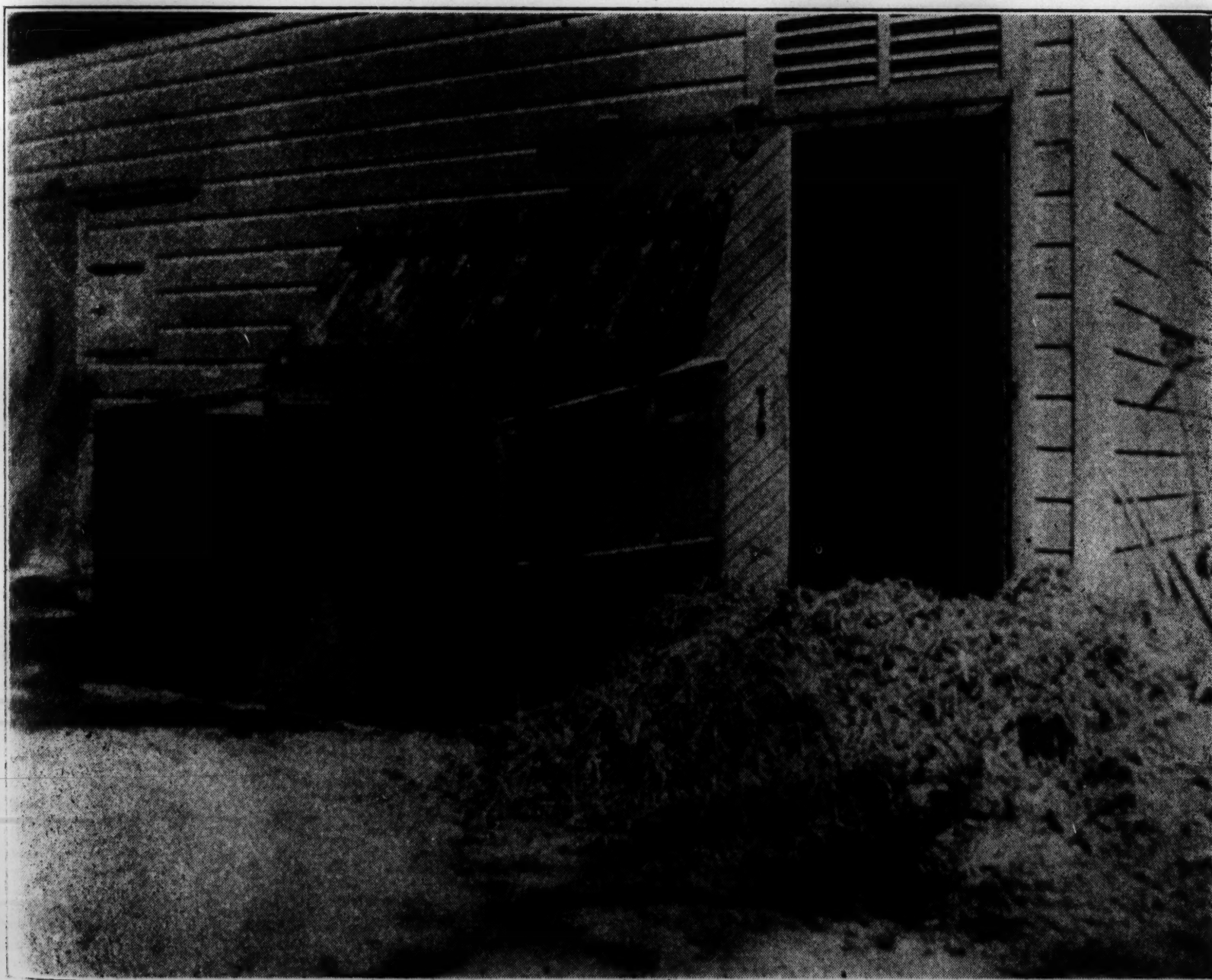
Oakland.

MISCELLANEOUS NEEDS—COUNTRY AND CITY REAL ESTATE.

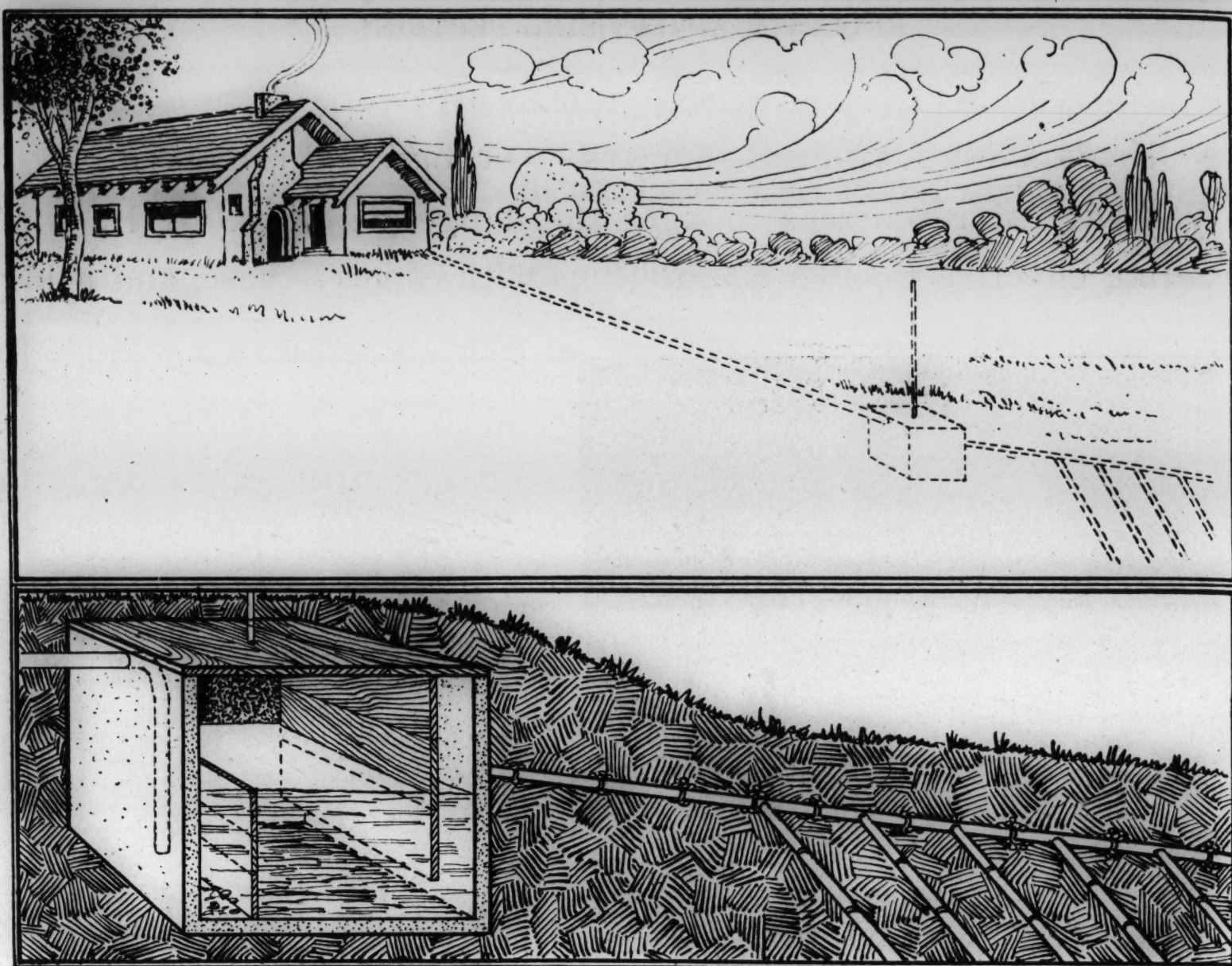
Wanted: More citizens to fight the dangerous house fly by constructing effective wooden manure bins with concrete base, and using



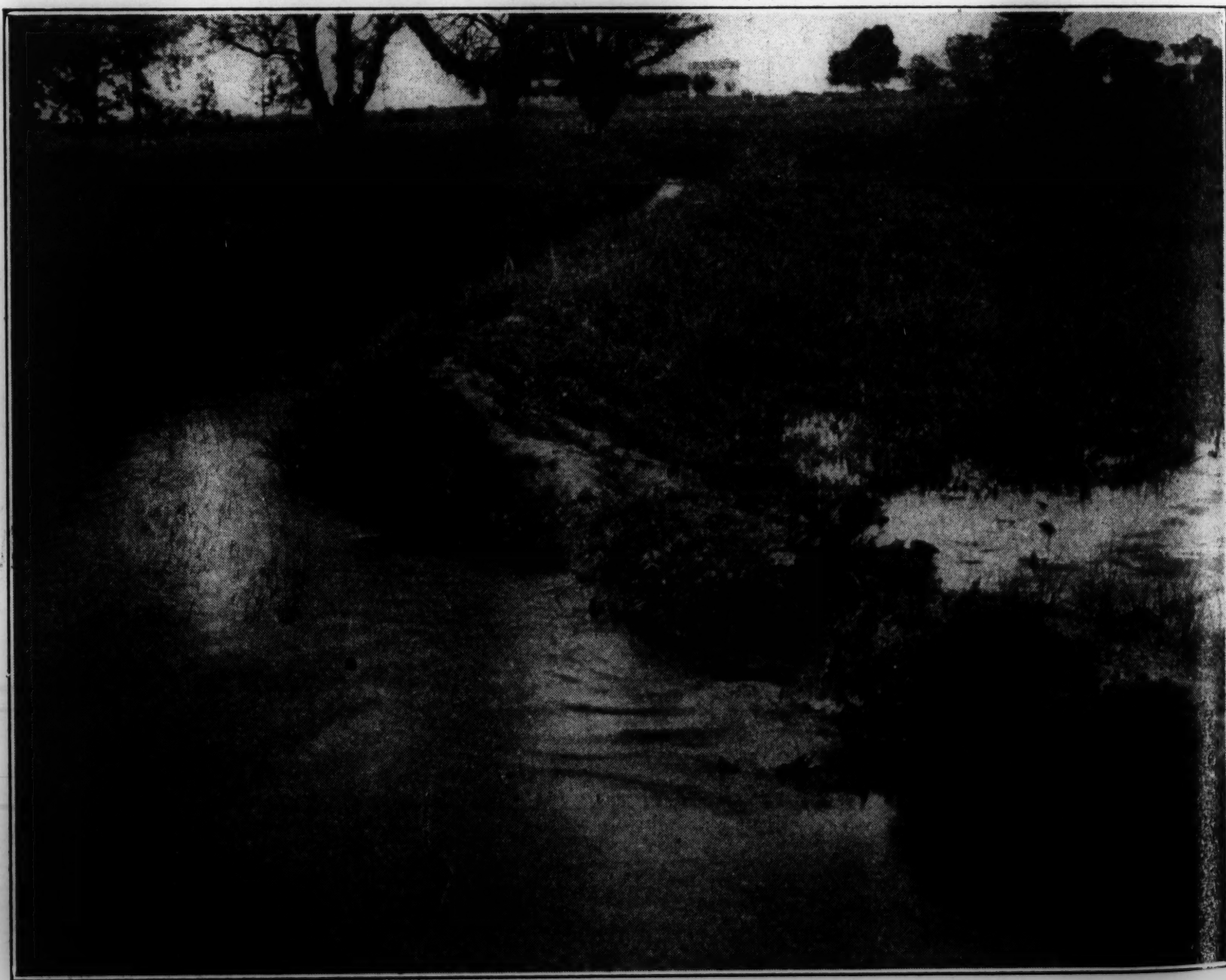
them for the temporary storage of the daily manure sweepings shown in the picture below.



Address California State Board of Health for detailed information.



Wanted: More citizens to coöperate in fighting typhoid fever, by constructing inexpensive sewage disposal plants and by preventing the pollution of irrigating ditches and surface streams.



Address California State Board of Health for circulars on Sewage Disposal, etc.

PARTIAL LIST OF PUBLIC HEALTH ORGANIZATIONS OF CALIFORNIA.

(A). California Public Health League.

President, Mr. A. Bonnheim, Sacramento.

Secretary, Dr. William F. Snow, Sacramento.

NOTE.—The League is made up of the Associations indicated by a (*) in the list given below. The purpose of the League is to serve as a clearing-house for all the common interests of the societies composing its membership. All correspondence should be addressed to the Secretary, Sacramento, California.

(B). Organizations Which Are Active Along Special Lines of Health Conservation.

I. Associations for the Prevention of Tuberculosis.

1. *California State Association for the Study and Prevention of Tuberculosis. President, Dr. F. C. E. Mattison, Pasadena; Secretary, Dr. George H. Kress, Bradbury Block, Los Angeles.

2. Affiliated Branch Societies: Alameda County, Long Beach, Los Angeles, Monrovia, Pasadena, Redlands, Sacramento, San Diego, San Francisco, Santa Ana, Santa Barbara, Sierra Madre, Stockton.

II. Associations for the Prevention of Syphilis and Gonococcus Infections.

1. *California State Association for the Study and Prevention of Syphilis and Gonococcus Infection. President, Dr. John C. Spencer, Butler Building, San Francisco; Secretary, Dr. R. A. Archibald, Department of Health, Oakland.

III. Associations for the Improvement of Milk Supplies.

1. *California State Association of Medical Milk Commissions. Dr. Lewis Sayre Mace, Chairman Executive Committee.

2. Affiliated branch commissions: San Francisco, Los Angeles, Oakland, San Jose, Sacramento, Santa Barbara.

3. San Francisco Milk Improvement Association.

IV. Associations for the Improvement of Child Hygiene.

1. *California Playground Association. President, O. K. Cushing, First National Bank Building, San Francisco; Secretary, C. E. Hudspeth, 781 Fifty-ninth Street, Oakland.

2. Local associations: Los Angeles, Oakland, Sacramento, Fresno, San Jose.

V. Miscellaneous Associations Carrying on Important Public Health Work.

1. *American Red Cross. There are chapters in San Francisco, Berkeley, Los Angeles, Stockton, Sacramento and Napa.

2. *California Federation of Women's Clubs.

3. *California Teachers' Association.

4. *California Press Association.

5. *State Charities Aid Association.

6. Anti-Mosquito Associations.

7. Association of Collegiate Alumnæ.

8. Civic Department, California Club, San Francisco.

9. "The Public Health Education Committee of the A. M. A.," Eleanor Seymour, M.D., Los Angeles, State Secretary.

This list is incomplete and will be changed each month as corrections and additions are sent in.

Names of officers and information concerning these associations will be sent on application to the State Associations listed, or to the Secretary of the State Board of Health.

LIST OF COUNTY HEALTH OFFICERS.

<i>County.</i>	<i>Health Officer.</i>	<i>Address.</i>
Alameda	Dr. C. L. McKown.....	Niles
Alpine
Amador	Dr. E. E. Endicott.....	Jackson
Butte	Dr. L. Q. Thompson.....	Gridley
Calaveras	Dr. E. W. Weirich.....	Angels Camp
Colusa	Dr. C. A. Poage.....	Colusa
Contra Costa	Dr. F. S. Gregory.....	Black Diamond
Del Norte
El Dorado	Dr. S. H. Rantz.....	Placerville
Fresno	Dr. G. L. Long.....	Fresno
Glenn	Dr. J. A. Randolph.....	Willows
Humboldt	Dr. E. H. Bryan.....	Eureka
Imperial	Dr. E. E. Patten.....	Imperial
Inyo	Dr. I. J. Woodin.....	Independence
Kern	Dr. W. S. Fowler.....	Bakersfield
Kings	Dr. Ralph Motherol.....	Hanford
Lake	Dr. W. E. Upton.....	Kelseyville
Lassen	Dr. E. C. Houston.....	Bieber
Los Angeles	Dr. O. R. Stafford.....	3754 Vermont ave., Los Angeles
Madera	Dr. Mary R. Butin.....	Madera
Marin	Dr. J. H. Kuser.....	San Rafael
Mariposa	Dr. F. L. Wright.....	Mariposa
Mendocino	Dr. J. Litchfield.....	Ukiah
Merced	Dr. W. E. Lilley.....	Merced
Modoc	Dr. John Stile.....	Alturas
Mono
Monterey	Dr. Garth Parker.....	Salinas
Napa	Dr. Adolph J. Kahn (County Physician).....	Napa
Nevada	Dr. Carl P. Jones.....	Grass Valley
Orange	Dr. C. D. Ball.....	Santa Ana
Placer	Dr. G. H. Fay.....	Auburn
Plumas	Dr. F. D. Walsh.....	Quincy
Riverside	Dr. George E. Tucker.....	Riverside
Sacramento	Dr. Hugh Beattie.....	Elk Grove
San Benito	Dr. R. G. Curtis.....	Hollister
San Bernardino	Dr. D. C. Strong.....	San Bernardino
San Diego
San Francisco	Dr. W. F. McNutt, Jr.....	San Francisco
San Joaquín	Dr. R. B. Knight.....	Stockton
San Luis Obispo.....	Dr. H. M. Cox.....	San Luis Obispo
San Mateo	Dr. W. G. Beattie.....	Colma
Santa Barbara	Dr. J. C. Bainbridge.....	Santa Barbara
Santa Clara	Dr. Wm. Simpson.....	San Jose
Santa Cruz	Dr. W. R. Congdon.....	Santa Cruz
Shasta	Dr. F. Stabel.....	Redding
Sierra	Dr. R. B. Davy.....	Downieville
Siskiyou	Dr. F. J. McNulty (County Physician).....	Yreka
Solano	Dr. S. G. Bransford.....	Suisun
Sonoma	Dr. S. S. Bogle.....	Santa Rosa
Stanislaus	Dr. F. R. De Lappe.....	Modesto
Sutter	Dr. J. McFadyen.....	Yuba City
Tehama	Dr. E. E. Thompson.....	Red Bluff
Trinity	Dr. D. B. Fields.....	Weaverville
Tulare	Dr. F. A. Coombs.....	Visalia
Tuolumne	Dr. C. E. Congdon.....	Jamestown
Ventura	Dr. A. A. Maulhardt.....	Oxnard
Yolo	Dr. W. J. Blevins.....	Woodland
Yuba	Dr. J. H. Barr.....	Marysville

PARTIAL LIST OF CITY HEALTH OFFICERS.

Alameda.....	Dr. L. W. Stidham	Merced.....	Dr. C. H. Castle
Alhambra.....	Dr. F. E. Corey	Mill Valley.....	Capt. M. Staples
Alturas.....	Dr. John Stile	Modesto.....	Dr. F. R. De Lappe
Anaheim.....	Dr. J. L. Beebe	Mojave.....	Mr. A. Smith
Antioch.....	E. C. Worrell	Monrovia.....	Dr. R. D. Adams
Auburn.....	Dr. R. F. Rooney	Monterey.....	Martin Birks
Azusa.....	Dr. S. A. Ellis	Morgan Hill.....	Dr. D. W. Watt
Berkeley.....	Dr. J. J. Benton	Mountain View.....	Dr. Philo Hull
Biggs.....	Dr. B. Caldwell	Napa.....	J. D. Treadway
Black Diamond.....	Dr. F. S. Gregory	National City.....	Dr. Theo. F. Johnson
Bakersfield.....	J. E. Yancey	Nevada City.....	Hugh Murchie
Chico.....	G. H. Taylor	Oakland.....	Dr. E. N. Ewer
Chino.....	Dr. P. M. Savage	Ontario.....	Dr. C. S. Orr
Coalinga.....	Dr. H. C. Warren	Orange.....	Dr. F. L. Champline
Colton.....	Dr. J. A. Champion	Oroville.....	Dr. W. F. Gates
Colusa.....	Dr. W. T. Rathbun	Oxnard.....	Dr. Ralph W. Avery
Corona.....	Dr. P. F. Page	Pacific Grove.....	Dr. H. N. Yates
Coronado.....	Dr. Raffaele Lorini	Palo Alto.....	Dr. T. M. Williams
Davis.....	Dr. W. E. Bates	Pasadena.....	Dr. Stanley P. Black
Doris.....	Dr. A. A. Atkinson	Petaluma.....	Dr. R. B. Duncan
Dixon.....	Dr. R. L. Rierson	Placerville.....	Mr. P. J. Hall
Dunsmuir.....	Dr. E. J. Cornish	Pomona.....	Dr. T. J. Wilson
East San Jose.....	Dr. W. A. Low	Piedmont.....	Geo. T. Burtchael
Elsinore.....	Dr. Hugh Walker	Randsburg.....	Mr. E. B. McGinnes
Econdido.....	Dr. David Crise	Redding.....	L. D. Poole
Etna.....	Dr. W. H. Haines	Redlands.....	Dr. J. M. Wheat
Eureka.....	Dr. W. L. Perrott	Redondo Beach.....	Dr. D. R. Hancock
Fairfield.....	Dr. S. G. Bransford	Richmond.....	Dr. Chas. R. Blake
Ferndale.....	Dr. L. Michael	Riverside.....	Dr. Thos. R. Griffith
Fort Jones.....	Thos. Bransom	Sacramento.....	Dr. Wm. K. Lindsay
Fresno.....	Dr. Geo. H. Aiken	Salinas.....	S. A. McCollum
Gilroy.....	Dr. Jonas Clark	San Bernardino.....	Dr. J. G. Ham
Glendale.....	R. E. Chase	San Diego.....	Dr. F. H. Mead
Grass Valley.....	Dr. C. P. Jones	San Francisco.....	Dr. W. F. McNutt, Jr.
Hayward.....	Dr. F. W. Browning	San Jose.....	Dr. A. L. Cothran
Healdsburg.....	Dr. O. C. Hueb	San Jacinto.....	Charles Long
Hermosa Beach.....	H. Vetter	Santa Ana.....	Dr. J. I. Clark
Hollywood.....	E. O. Palmer	Santa Barbara.....	Dr. T. A. Stoddard
Huntington Park.....	Dr. W. Thompson	Santa Cruz.....	Dr. C. H. Anderson
Kernville.....	Mr. J. W. Sumner	Santa Monica.....	Dr. W. H. Parker
Lakeport.....	Dr. Jabez Banks	Santa Rosa.....	Dr. Jackson Temple, Jr.
Lincoln.....	Dr. G. W. Davis	Sisson.....	Dr. L. Gouzuot
Lindsay.....	Dr. Walter W. Tourtillott	South Pasadena.....	Dr. C. A. Whiting
Livermore.....	Dr. H. G. McGill	Stockton.....	Dr. S. W. R. Langdon
Lodi.....	Dr. F. W. Colman	Taft.....	Mr. J. W. Bursell
Long Beach.....	Dr. W. H. Newman	Tracy.....	Dr. J. G. Murrell
Los Angeles.....	Dr. L. M. Powers	Turlock.....	Dr. E. L. Clough
Los Gatos.....	Dr. Elenor S. Yelland	Vacaville.....	Mr. A. P. Finan
Madera.....	Dr. Mary R. Butin	Vallejo.....	Dr. F. T. Bond
Maricopa.....	Mr. Thad Cheeney	Watsonville.....	Dr. F. H. Koepke
Martinez.....	Dr. E. E. Brown	Yreka.....	Dr. A. J. Collar
McKittrick.....	Mr. G. M. Chitwood		

THE CALIFORNIA STATE BOARD OF
HEALTH BULLETIN WILL BE SENT
FREE TO ANY CITIZEN OF THE STATE
ON REQUEST.